SKILLEDTRADES BC

PROGRAM OUTLINE

Automotive Refinishing Prep Technician and Automotive Painter (Automotive Refinishing Technician)

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AUTOMOTIVE PAINTER
(AUTOMOTIVE REFINISHING TECHNICIAN)
AND
AUTOMOTIVE REFINISHING PREP TECHNICIAN
PROGRAM OUTLINE

APPROVED BY INDUSTRY

JUNE 2016

BASED ON AUTOMOTIVE PAINTER

NOA 2014

Developed by
SkilledTradesBC
Province of British Columbia

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Section 1

INTRODUCTION

Automotive Painter
(Automotive Refinishing Technician)
and
Automotive Refinishing Prep Technician

Foreword

This revised Automotive Painter (Automotive Refinishing Technician) and Automotive Refinishing Prep Technician Program Outline is intended as a guide for instructors, apprentices, employers of apprentices as well as for the use of industry organizations, regulatory bodies, provincial and federal governments. It reflects updated standards based on the new Automotive Painter Occupational Analysis (2014) and British Columbia industry and instructor subject matter experts.

Practical instruction by demonstration and student participation should be integrated with classroom sessions. Safe working practices, even though not always specified in each operation or topic, are an implied part of the program and should be stressed throughout the apprenticeship.

This Program Outline includes a list of recommended reference textbooks that are available to support the learning objectives and the minimum shop requirements needed to support instruction.

Each competency is to be evaluated through the use of written and/or practical assessment in which the learner must achieve a minimum of 70% in order to receive a passing grade. The types of questions used on these exams must reflect the cognitive level indicated by the learning objectives and the learning tasks listed in the related competencies.

Achievement Criteria are included for those competencies that require a practical component. The intent of including Achievement Criteria in the Program Outline is to ensure consistency in training across the many training institutions in British Columbia. Their purpose is to reinforce the theory and to provide a mechanism for evaluation of the learner's ability to apply the theory to practice. It is important that these performances be observable and measureable and that they reflect the skills spelled out in the competency as those required of a competent journeyperson. The conditions under which these performances will be observed and measured must be clear to the learner as well as the criteria by which the learner will be evaluated. The learner must also be given the evaluation criteria.

The performance spelled out in the Achievement Criteria is a suggested performance and is not meant to stifle flexibility of delivery. Training providers are welcome to substitute other practical performances that measure similar skills and attainment of the competency. Multiple performances may also be used to replace individual performances where appropriate.

SAFETY ADVISORY

Be advised that references to the WorkSafeBC safety regulations contained within these materials do not/may not reflect the most recent Occupational Health and Safety Regulation (the current Standards and Regulation in BC can be obtained on the following website: http://www.worksafebc.com). Please note that it is always the responsibility of any person using these materials to inform him/herself about the Occupational Health and Safety Regulation pertaining to his/her work.

Acknowledgements

The Occupational Analysis Chart was reviewed and revised by the following Industry Subject Matter Experts:

- Michael Japuncic
- Ian Johnston
- Kyle Kushnir White & Peters
- Todd Regier Prestige Collision
- Cory Swanson Prestige Collision

The Program Outline was reviewed and revised by Industry and Instructor Subject Matter Experts:

- David Cross Vancouver Community College
- Mark Deroche British Columbia Institute of Technology
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- Kelby Paul Haldorson British Columbia Institute of Technology
- Byron Hayashi College of New Caledonia
- Michael Japuncic
- Ian Johnston
- Kyle Kushnir White & Peters
- Nick Penner University of the Fraser Valley
- Derek Sproston BASF

SkilledTradesBC would like to acknowledge the dedication and hard work of all the industry representatives appointed to identify the training requirements of the Automotive Painter (Automotive Refinishing Technician) and Automotive Refinishing Prep Technician occupations.

How to Use this Document

This Program Outline has been developed for the use of individuals from several different audiences. The table below describes how each section can be used by each intended audience.

Section	Training Providers	Employers/ Sponsors	Apprentices	Challengers
Program Credentialing Model	Communicate program length and structure, and all pathways to completion	Understand the length and structure of the program	Understand the length and structure of the program, and pathway to completion	Understand challenger pathway to Certificate of Qualification
OAC	Communicate the competencies that industry has defined as representing the scope of the occupation	Understand the competencies that an apprentice is expected to demonstrate in order to achieve certification	View the competencies they will achieve as a result of program completion	Understand the competencies they must demonstrate in order to challenge the program
Training Topics and Suggested Time Allocation	Shows proportionate representation of general areas of competency (GACs) at each program level, the suggested proportion of time spent on each GAC, and percentage of time spent on theory versus practical application	Understand the scope of competencies covered in the technical training, the suggested proportion of time spent on each GAC, and the percentage of that time spent on theory versus practical application	Understand the scope of competencies covered in the technical training, the suggested proportion of time spent on each GAC, and the percentage of that time spent on theory versus practical application	Understand the relative weightings of various competencies of the occupation on which assessment is based
Program Content	Defines the objectives, learning tasks, high level content that must be covered for each competency, as well as defining observable, measureable achievement criteria for objectives with a practical component	Identifies detailed program content and performance expectations for competencies with a practical component; may be used as a checklist prior to signing a recommendation for certification (RFC) for an apprentice	Provides detailed information on program content and performance expectations for demonstrating competency	Allows individual to check program content areas against their own knowledge and performance expectations against their own skill levels
Training Provider Standards	Defines the facility requirements, tools and equipment, reference materials (if any) and instructor requirements for the program	Identifies the tools and equipment an apprentice is expected to have access to; which are supplied by the training provider and which the student is expected to own	Provides information on the training facility, tools and equipment provided by the school and the student, reference materials they may be expected to acquire, and minimum qualification levels of program instructors	Identifies the tools and equipment a tradesperson is expected to be competent in using or operating; which may be used or provided in a practical assessment

Section	Training Providers	Employers/ Sponsors	Apprentices	Challengers
Appendix – Glossary of Acronyms	Defines program specific acronyms	Defines program specific acronyms	Defines program specific acronyms	Defines program specific acronyms

Section 2

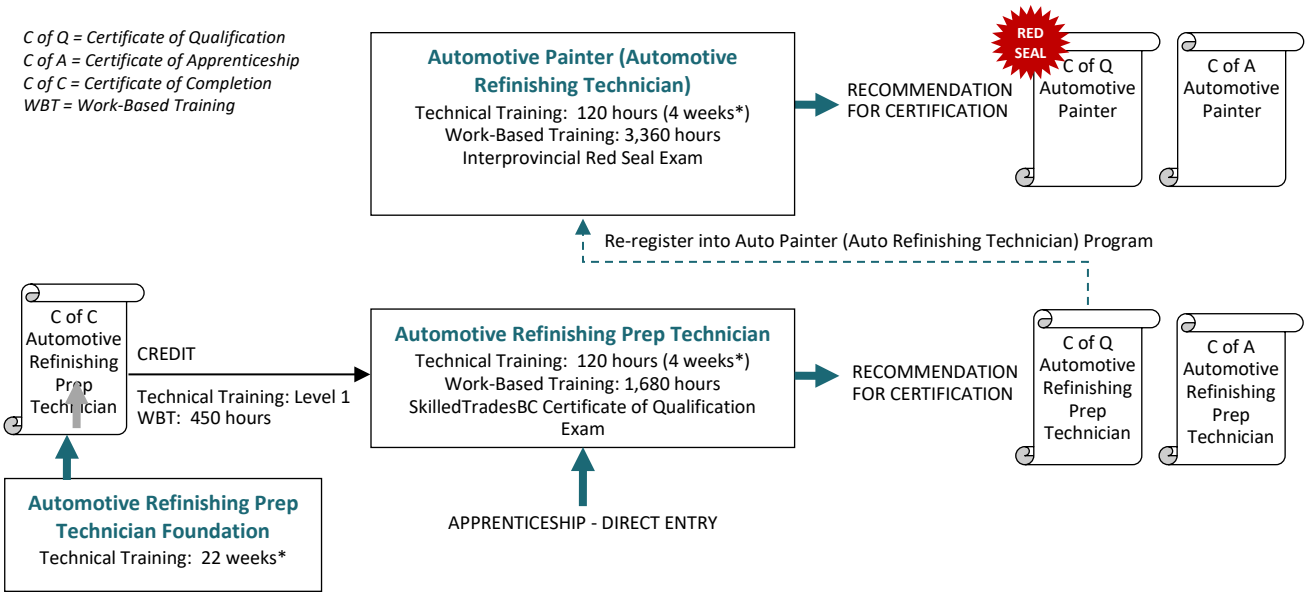
PROGRAM OVERVIEW

Automotive Painter
(Automotive Refinishing Technician)
and
Automotive Refinishing Prep Technician

Program Credentialing Model

Apprenticeship Pathway

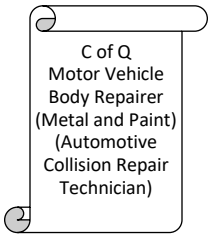
This graphic provides an overview of the Automotive Painter (Automotive Refinishing Technician) and Automotive Refinishing Prep Technician apprenticeship pathway.



**Suggested duration based on 30-hour week*

CROSS-PROGRAM CREDITS

Individuals who hold the credentials listed below are entitled to receive partial credit toward the completion requirements of this program



Technical Training: None
Automotive Refinishing Prep Technician - Work-Based Training: 1,680 hours

Occupational Analysis Chart

AUTOMOTIVE PAINTER (AUTOMOTIVE REFINISHING TECHNICIAN) AND AUTOMOTIVE REFINISHING PREP TECHNICIAN

Occupation Description: Automotive Painters (Automotive Refinishing Technicians) work on the surfaces of motor vehicles, primarily in restoring vehicle finishes once body work has been completed. Some of the duties that an Automotive Painter completes include: removing layers of sub-coating; matching colours and mixing paints; preparing metal surfaces for painting by spot filling, sanding, and masking; applying primers, primer surfacers, colour coats, and clearcoats; and cleaning and polishing painted surfaces including removing and replacing decals.

Occupation Description: Automotive Refinishing Prep Technicians work on the surfaces of motor vehicles, primarily in the preparation for restoring vehicle finishes once body work has been completed and prior to painting. Some of the duties that an Automotive Refinishing Prep Technician completes include: removing layers of sub-coating; mixing undercoats; preparing metal surfaces for painting by spot filling, sanding, and masking; applying primers, and primer surfacers; and cleaning and polishing painted surfaces.

Note: *Automotive Refinishing Prep Technician program competencies are indicated by (1) and Automotive Painter (Automotive Refinishing Technician) program competencies are indicated by (2)*

PERFORM SAFETY-RELATED FUNCTIONS **A**	Use PPE and safety equipment A1	1	Maintain safe work environment A2	1	
MAINTAIN TOOLS AND EQUIPMENT **B**	Maintain hand and power tools B1	1	Maintain spray booth B2	1	Maintain spray equipment B3	1
USE DOCUMENTATION **C**	Interpret vehicle information C1	1	Use technical manuals and bulletins C2	1	Comply with safety and environmental regulations C3	1	Interpret work orders C4	1

Program Overview

PLAN WORK D	Perform inspection D1	Contribute to development of repair estimate D2	Organize production schedule D3	
	1 2	2	1 2	
PREPARE SURFACE E	Prepare vehicle for refinishing E1	Mask vehicle E2	Strip surface E3	Sand surface E4
	1 2	1	1	1
USE REPAIR MATERIALS F	Mix repair materials F1	Apply repair materials F2	Apply corrosion protection F3	
	1	1	1	
USE EQUIPMENT G	Use spray guns G1	Operate spray booth G2	Operate drying and curing equipment G3	Use paint manufacturers' software and equipment G4
	1	1	1	1
USE REFINISHING MATERIAL H	Mix paint H1	Perform colour matching H2	Apply refinishing materials H3	Troubleshoot paint problems H4
	2	2	2	2
PERFORM PRE-DELIVERY TASKS I	Remove surface imperfections I1	Install trim and accessories I2	Apply decals and striping I3	Perform final check I4
	1 2	1	2	2

Training Topics and Suggested Time Allocation

Automotive Refinishing Prep Technician

			% of Time Allocated to:		
		% of Time	Theory	Practical	Total
Line A	**PERFORM SAFETY-RELATED FUNCTIONS**	**10%**	**70%**	**30%**	**100%**
A1	Use PPE and safety equipment		✓	✓	
A2	Maintain safe work environment		✓	✓	
Line B	**MAINTAIN TOOLS AND EQUIPMENT**	**10%**	**40%**	**60%**	**100%**
B1	Maintain hand and power tools		✓		
B2	Maintain spray booth		✓	✓	
B3	Maintain spray equipment		✓	✓	
Line C	**USE DOCUMENTATION**	**5%**	**100%**	**0%**	**100%**
C1	Interpret vehicle information		✓		
C2	Use technical manuals and bulletins		✓		
C3	Comply with safety and environmental regulations		✓		
C4	Interpret work orders		✓		
Line D	**PLAN WORK**	**5%**	**50%**	**50%**	**100%**
D1	Perform inspection		✓	✓	
D3	Organize production schedule		✓	✓	
Line E	**PREPARE SURFACE**	**35%**	**20%**	**80%**	**100%**
E1	Prepare vehicle for refinishing		✓	✓	
E2	Mask vehicle		✓	✓	
E3	Strip surface		✓		
E4	Sand surface		✓	✓	
Line F	**USE REPAIR MATERIALS**	**15%**	**40%**	**60%**	**100%**
F1	Mix repair materials		✓	✓	
F2	Apply repair materials		✓	✓	
F3	Apply corrosion protection		✓	✓	
Line G	**USE EQUIPMENT**	**10%**	**20%**	**80%**	**100%**
G1	Use spray guns		✓	✓	
G2	Operate spray booth		✓	✓	
G3	Operate drying and curing equipment		✓	✓	
G4	Use paint manufacturers' software and equipment		✓	✓	

Line I	**PERFORM PRE-DELIVERY TASKS**	**10%**	**40%**	**60%**	**100%**
I1	Remove surface imperfections		✓	✓	
I2	Install trim and accessories		✓	✓	
	Total Percentage for Automotive Refinishing Prep Technician	**100%**			

Training Topics and Suggested Time Allocation

Automotive Painter (Automotive Refinishing Technician)

			% of Time Allocated to:		
		% of Time	Theory	Practical	Total
Line D	**PLAN WORK**	**10%**	**30%**	**70%**	**100%**
D1	Perform inspection		✓	✓	
D2	Contribute to development of repair estimate		✓	✓	
D3	Organize production schedule		✓	✓	
Line E	**PREPARE SURFACE**	**5%**	**20%**	**80%**	**100%**
E1	Prepare vehicle for refinishing		✓	✓	
Line H	**USE REFINISHING MATERIAL**	**75%**	**25%**	**75%**	**100%**
H1	Mix paint		✓	✓	
H2	Perform colour matching		✓		
H3	Apply refinishing materials		✓	✓	
H4	Troubleshoot paint problems		✓		
Line I	**PERFORM PRE-DELIVERY TASKS**	**10%**	**20%**	**80%**	**100%**
I1	Remove surface imperfections		✓	✓	
I3	Apply decals and striping		✓	✓	
I4	Perform final check		✓	✓	
	Total Percentage for Automotive Painter (Automotive Refinishing Technician)	**100%**			

Section 3

PROGRAM CONTENT

Automotive Painter

(Automotive Refinishing Technician)

and

Automotive Refinishing Prep Technician

Automotive Refinishing Prep Technician

Line (GAC): A PERFORM SAFETY-RELATED FUNCTIONS

Competency: A1 Use PPE and safety equipment

Objectives

To be competent in this area, the individual must be able to:

- Use PPE.
- Use safety equipment.

LEARNING TASKS	CONTENT

1. Identify PPE	• CSA-approved
	• Eye protection
	  ○ Goggles
	  ○ Glasses
	  ○ Face shields
	• Respiratory protection
	  ○ Dust mask
	  ○ Air-supplied
	  ○ Cartridge
	• Skin protection
	  ○ Gloves
	  ○ Coveralls
	  ○ Barrier creams
	• Foot protection
	• Hearing protection

2. Identify safety equipment	• Fire suppression systems
	  ○ Extinguishers
	  ○ Sprinklers
	• Ventilation systems
	• Eye wash stations
	• Spill kits
	• First aid kits

3. Use PPE and safety equipment	• Selection
	• Storage
	• Maintenance
	• Testing
	  ○ Fit
	  ○ Operation
	  ○ Condition

Achievement Criteria

Performance	The learner will apply proper personal safety practices during all shop activities.
Conditions	The learner will be given: • Workplace orientation • Access to all personal safety equipment • Clear guidelines • Access to OHS regulation and WorkSafeBC standards
Criteria	The learner will start with 100% and a demerit system will deduct a given percentage for safety infractions. A weighting system will be applied to individual safety infractions.

Line (GAC): A PERFORM SAFETY-RELATED FUNCTIONS

Competency: A2 Maintain safe work environment

Objectives

To be competent in this area, the individual must be able to:

- Identify hazards.
- Maintain a safe work environment.

LEARNING TASKS	CONTENT

1. Identify hazards	• Job Hazard Analysis (JHA)
	• Chemical exposure
	  ○ Particulates
	  ○ Vapours
	  ○ Fumes
	  ○ Mists
	  ○ Liquids
	  ○ Isocyanates
	  ○ Acute exposure
	  ○ Chronic exposure
	• Combustibles
	  ○ Types
	  ○ Ignition sources
	• Noise
	• Vehicle hazards
	  ○ Alternative fuels
	  ○ Electrical components
	  ○ Supplemental Restraint Systems (SRS)
	  ○ Heating, Ventilation and Air Conditioning (HVAC)
	• Shop equipment
	  ○ Lifts
	  ○ Stands
	  ○ Enclosures

2. Describe fire safety	• Classification
	  ○ Types of fire
	  ○ Types of extinguishers
	• Prevention
	• Procedures
	  ○ Pull, Aim, Squeeze, Sweep (PASS)
	  ○ Fire drills

3. Maintain a safe work environment	• Workplace Hazardous Material Information

LEARNING TASKS	CONTENT

	System (WHMIS) implementation
	• Shop layout
	  ○ Location of safety equipment
	  ○ Emergency exits
	  ○ Materials storage
	• Ventilation systems
	• Housekeeping

4. Use vehicle handling procedures	• Jump start a vehicle • Lifting and jacking • Wheel Re & I • Vehicle operation

Achievement Criteria

Performance	The learner will maintain a safe work environment during all shop activities.
Conditions	The learner will be given: • Workplace orientation • Access to all safety equipment • Clear guidelines • Access to OHS regulation and WorkSafeBC standards
Criteria	The learner will be evaluated on safe work practices and procedures.

.

Line (GAC): B MAINTAIN TOOLS AND EQUIPMENT

Competency: B1 Maintain hand and power tools

Objectives

To be competent in this area, the individual must be able to:

- Describe tools and equipment.
- Describe the maintenance of tools and equipment.

LEARNING TASKS	CONTENT

1. Describe hand tools	• Basic hand tools
	  ○ Screwdrivers
	  ○ Sockets
	  ○ Wrenches
	• Sanding blocks
	• Trim tools
	• Cutting and scraping tools

2. Describe power tools	• Pneumatic
	  ○ Sanders
	  ○ Polishers
	  ○ Ratchets
	  ○ Eraser wheels
	  ○ Impact guns
	• Electric
	  ○ Heat guns
	  ○ Polishers
	  ○ Cordless

3. Describe shop equipment	• Compressors
	  ○ Rotary
	  ○ Piston
	  ○ Diaphragm
	• Compressor air dryer
	• Gun washers
	• Drying equipment
	  ○ Infra-red lamps
	  ○ UV lamps
	• Paper compactors
	• Hydraulic
	  ○ Jacks
	  ○ Lifts

LEARNING TASKS	CONTENT
4. Describe the maintenance of tools and equipment	• Lubrication • Cleaning • Consumables replacement • Unsafe tools • Storage

Line (GAC): B MAINTAIN TOOLS AND EQUIPMENT

Competency: B2 Maintain spray booth

Objectives

To be competent in this area, the individual must be able to:

- Describe spray booths and their components.
- Maintain spray booths and their components.

LEARNING TASKS	CONTENT
1. Describe spray booths	• Downdrafts • Crossdrafts (crossflows) • Semi-downdrafts • Prep stations

2. Describe spray booth components	• Intake
	  ○ Air makeup
	• Exhaust
	• Manometers and magnehelics
	• Filtration
	  ○ Pre-intake
	  ○ Intake
	  ○ Exhaust
	  ○ Air transformers
	• Air blowers
	• Lighting
	• Seals and gaskets
	• Belts
	• Hoses and fittings
	• Glass

3. Maintain spray booths, mixing room and components	• Schedules
	• Inspection
	• Cleaning
	• Replacement
	  ○ Filters
	  ○ Lights
	  ○ Seals
	  ○ Booth coating

Achievement Criteria

Performance	The learner will perform spray booth maintenance according to schedule.
Conditions	The learner will be given: • Maintenance schedule and/or checklist • Necessary materials
Criteria	The learner will be evaluated on: • Safety • Tool use • Environmental practices • Maintenance of spray booth and its components

Line (GAC): B MAINTAIN TOOLS AND EQUIPMENT

Competency: B3 Maintain spray equipment

Objectives

To be competent in this area, the individual must be able to:

- Describe spray gun components.
- Maintain spray equipment.

LEARNING TASKS	CONTENT

1. Describe spray equipment	• Spray gun types
	  ○ Gravity feed
	  ○ Pressure feed
	  ○ Siphon feed
	  ○ Electrostatic
	• Spray gun components
	  ○ Body
	  ○ Trigger
	  ○ Regulators
	  ○ Air cap
	  ○ Seals and packings
	  ○ Spreader adjustment
	  ○ Fluid adjustment
	  ○ Fluid nozzle
	  ○ Fluid needle
	  ○ Cup
	• Nitrogen generators

2. Maintain spray equipment	• Inspection • Cleaning • Lubrication • Disassembly and reassembly • Storage

Achievement Criteria

Performance	The learner will perform spray equipment maintenance and test spray.
Conditions	The learner will be given: • Spray equipment • Task guideline • Necessary materials
Criteria	The learner will be evaluated on: • Safety • Tool use • Environmental practices • Assembly and disassembly • Spray equipment cleanliness and performance

Line (GAC): C USE DOCUMENTATION

Competency: C1 Interpret vehicle information

Objectives

To be competent in this area, the individual must be able to locate and interpret vehicle information.

LEARNING TASKS	CONTENT
1. Locate and interpret vehicle information	• Paint code • Manufacturer • Model • Year • VIN

Line (GAC): C USE DOCUMENTATION

Competency: C2 Use technical manuals and bulletins

Objectives

To be competent in this area, the individual must be able to access and interpret technical manuals and bulletins.

LEARNING TASKS	CONTENT
1. Access technical manuals and bulletins	• Printed • Electronic
2. Interpret information in manuals and bulletins	• Paint formulas • Product information • Procedure

Line (GAC): C USE DOCUMENTATION

Competency: C3 Comply with safety and environmental regulations

Objectives

To be competent in this area, the individual must be able to:

- Access and comply with environmental and safety regulations.
- Complete required safety and environmental documentation.

LEARNING TASKS	CONTENT

1. Identify environmental regulations	• Jurisdictional Regulations
	  ○ National
	  ○ Provincial
	  ○ Municipal
	• Hazardous waste disposal
	• Volatile Organic Compounds (VOC)
	• Spills

2. Interpret safety regulations as they apply to refinishing procedures	• WorkSafeBC regulations • Workplace Hazardous Material Information System (WHMIS) • Safety Data Sheets (SDS) • Manufacturers' recommendations • Company regulations • Injury report • Fit test
3. Complete documentation for safety and environmental compliance	• Spill kit usage • VOC daily coatings log • Booth filter replacement log

Line (GAC): C USE DOCUMENTATION

Competency: C4 Interpret work orders

Objectives

To be competent in this area, the individual must be able to interpret different types of repair documentation.

LEARNING TASKS	CONTENT
1. Describe repair documentation	• Damage report • Work order • Estimate
2. Describe the insurance claim process in BC	• Accreditation • Public insurance • Private insurance
3. Interpret trade terminology found on work orders and estimates	• Re & Re • Re & I • Refinish • Blend • Overlap • Edge • Multi-stage • Over ride • Judgement Time (JT)

Line (GAC): D PLAN WORK

Competency: D1 Perform inspection

Objectives

To be competent in this area, the individual must be able to:

- Determine the type of substrate.
- Evaluate the condition of substrate.

LEARNING TASKS	CONTENT

1. Describe metals	• Types
	  ○ Steel – galvanized
	  ○ Steel – non-galvanized
	  ○ Aluminum
	  ○ Stainless
	• Characteristics
	• Location on vehicle

2. Describe plastics	• Thermoset • Composites • Urethane • Thermoplastic • SMC • Olefin • Non-Olefin • Rigid • Flexible • Location on vehicle
3. Describe topcoats	• Thermoset • Thermoplastic • Alkyd enamel • Acrylic enamel • Two-part urethane enamel • Polyurethane enamel • Acrylic lacquer • Waterborne

4.	Perform inspection of substrate	• Visual • By touch • Tape test • Mil thickness gauge • Solvent test • Sanding test

5.	Evaluate the substrate condition to determine next steps	• Quality of repair
		  ○ Pinholes
		  ○ Sand scratches
		  ○ Straightness
		• Previous damage or repair
		• Featheredging
		• Mil thickness
		• Adhesion
		• Environmental damage
		  ○ Acid rain
		  ○ Tree sap
		  ○ Industrial fall out
		  ○ UV damage
		• Corrosion
		• Brake dust

Achievement Criteria

Performance	The learner will perform a substrate evaluation.
Conditions	The learner will be given a substrate to assess.
Criteria	The learner will be evaluated on: • Safety • Accuracy of identification • Accuracy of evaluation

Line (GAC): D PLAN WORK

Competency: D3 Organize production schedule

Objectives

To be competent in this area, the individual must be able to:

- Describe the repair and refinish process.
- Develop a refinish plan.

LEARNING TASKS	CONTENT

1. Describe repair process	• Shop layout
	• Job duties
	• Workflow
	  ○ Inspection
	  ○ Estimate
	  ○ Order parts
	  ○ Body repair
	  ○ Prep
	  ○ Refinish
	  ○ Reassembly
	  ○ Detail
	  ○ Final inspection

2. Describe process timelines	• Cycle time • Dry time • Flash time • Impact on production schedule

3. Develop a refinish plan	• Consult production schedule
	• Interpret work order
	• Verify parts to be refinished
	• Evaluate substrate
	• Communicate with painter
	  ○ Blend areas
	  ○ Cut-off point
	  ○ Colour match
	• Select materials
	• Select tools

Achievement Criteria

Performance	The learner will develop a refinish plan.
Conditions	The learner will be given: • Work order or estimate • Vehicle to refinish
Criteria	The learner will be evaluated on: • Safety • Accuracy of the refinish plan • Efficiency of the refinish plan

Line (GAC): E PREPARE SURFACE

Competency: E1 Prepare vehicle for refinishing

Objectives

To be competent in this area, the individual must be able to prepare a panel for prep.

LEARNING TASKS	CONTENT
1. Remove necessary trim	• Tools • Fasteners • Decals and stripes • Mouldings • Belt • Side • After-market • Adhesives • Handles • Mirrors • Lights
2. Describe contaminants	• Solvent-borne • Water-borne

3. Describe cleaning products	• Safe use
	  ○ Product selection
	  ○ PPE
	  ○ Ventilation
	• Soap and water
	• Degreasers
	• Air gun
	• Tack cloth
	• Final wipe

Achievement Criteria

Performance	The learner will prepare a vehicle for prep.
Conditions	The learner will be given: • A vehicle or component • A work order • Cleaning materials • Required tools
Criteria	The learner will be evaluated on: • Safety • Material selection • Trim removal technique • Cleaning technique

Line (GAC): E PREPARE SURFACE

Competency: E2 Mask Vehicle

Objectives

To be competent in this area, the individual must be able to:

- Describe masking materials.
- Use masking techniques.
- Describe masking removal.

LEARNING TASKS	CONTENT

1. Describe masking materials	• Tapes
	  ○ Vinyl
	  ○ Crepe paper
	  ○ Duct
	  ○ Aluminum
	  ○ Foam
	  ○ Hard edge
	  ○ Size
	• Paper
	  ○ Coated
	  ○ Non-coated
	  ○ Size
	• Plastics
	  ○ Corona
	  ○ Non-corona
	• Rope
	• Spray masks
	• Equipment

2. Describe masking techniques	• Edge • Reverse mask • Inners • Back mask • Tunnel • Aperture • Flush mount • Perimeter masking • Fine line • Two-tone • Blend

LEARNING TASKS	CONTENT
3. Describe removal of masking materials	• When to remove • Techniques • Disposal
4. Use masking techniques	• For protection • For primer • For paint

Achievement Criteria 1

Performance: The learner will mask a vehicle for protection and primer.

Conditions: The learner will be given:

- A vehicle or component
- A work order
- Masking materials
- Required tools

Criteria: The learner will be evaluated on:

- Safety
- Material selection
- Masking technique

Achievement Criteria 2

Performance: The learner will mask a vehicle for paint.

Conditions: The learner will be given:

- A vehicle or component
- A work order
- Masking materials
- Required tools

Criteria: The learner will be evaluated on:

- Safety
- Material selection
- Masking technique

Line (GAC): E PREPARE SURFACE

Competency: E3 Strip surface

Objectives

To be competent in this area, the individual must be able to describe stripping techniques.

LEARNING TASKS

1. Describe stripping techniques

CONTENT

- Benefits and drawbacks
- Chemical
  - Application
  - Neutralizing residue
- Mechanical
  - Sanding
  - Grinding
  - Media blasting
- Laser

Line (GAC): E PREPARE SURFACE

Competency: E4 Sand surface

Objectives

To be competent in this area, the individual must be able to:

- Describe sanding materials and equipment.
- Use sanding techniques.

LEARNING TASKS	CONTENT
1. Describe sanding materials and equipment	• Sandpaper types • Abrasive types • Attachment methods • Sanders • Blocks • Scuff pads • Scuff paste • Vacuum assist • Ventilation • Guide coat
2. Use sanding techniques	• Wet or dry • Block sanding • Back sanding • Hand sanding • Scuff sanding • Machine sanding • Featheredging • Use of guide coat

Achievement Criteria

Performance: The learner will sand a vehicle for refinishing.

Conditions: The learner will be given:

- A vehicle or component
- A work order
- Sanding materials
- Required tools

Criteria: The learner will be evaluated on:

- Safety
- Material selection
- Sanding procedures
- Quality of sanded surface

Line (GAC): F USE REPAIR MATERIALS

Competency: F1 Mix repair materials

Objectives

To be competent in this area, the individual must be able to:

- Describe undercoats and repair materials.
- Select repair materials.
- Mix repair materials.

LEARNING TASKS	CONTENT

1. Describe undercoats	• Primer
	  ○ Etch
	  ○ Epoxy
	  ○ Plastic adhesion promoter
	• Primer surfacer
	  ○ High build
	  ○ Direct-to-metal (DTM)
	  ○ Polyester
	  ○ UV
	  ○ Water-borne
	• Primer sealer
	• Metal conditioner/conversion coating
	• Chip guards

2. Describe repair materials	• Finishing putty
	  ○ One-part
	  ○ Two-part
	• Seam sealers
	  ○ One-part
	  ○ Two-part

3. Describe solvents and additives	• Types of solvents
	  ○ Reducer
	  ○ Lacquer
	  ○ Wax and grease remover
	  ○ Acetone
	• Types of additives
	  ○ Flex agents
	  ○ Hardeners

LEARNING TASKS	CONTENT

	• Functions
	  ○ Cleaning
	  ○ Adhesion
	  ○ Flexibility
	  ○ Curing
	  ○ Viscosity
	  ○ VOC
	  ○ Productivity
	• Problems

4. Select repair materials	• Type of substrate
	  ○ Bare metal
	  ○ E-coat
	  ○ Plastic
	  ○ Body filler
	• Type of repair
	  ○ Pinhole
	  ○ Deep scratch
	  ○ Dent
	  ○ Seam
	• Production schedule
	• Spray conditions
	  ○ Size of repair
	  ○ Temperature
	  ○ Humidity

5. Mix repair materials	• Manufacturers' specifications
	• Environmental factors
	  ○ Temperature
	  ○ Humidity
	  ○ Pot life
	• Mix ratios
	  ○ Basic calculations
	  ○ Scale
	  ○ Graduated cylinder
	  ○ Mixing stick
	  ○ Viscosity cup
	• Induction time
	• Mixing techniques

Achievement Criteria

Performance	The learner will mix repair materials.
Conditions	The learner will be given: • Imperfection to repair • Various repair materials • Access to manufacturers' specifications
Criteria	The learner will be evaluated on: • Safety • Selection of repair material • Mixing ratio calculations • Mixing technique

Line (GAC): F USE REPAIR MATERIALS

Competency: F2 Apply repair materials

Objectives

To be competent in this area, the individual must be able to apply repair materials.

LEARNING TASKS	CONTENT

1. Describe application techniques	• Spreading
	• Spraying
	  ○ Distance
	  ○ Overlap
	  ○ Gun speed
	  ○ Air pressure
	  ○ Pattern
	• Roll-on
	• Brushing
	• Tooling

2. Select tools and equipment	• Spreaders
	• Spray guns
	• Rollers
	• Brushes
	• Seam sealer guns
	  ○ Manual
	  ○ Pneumatic
	  ○ Sprayable
	  ○ Cordless

3. Apply repair material	• Primer • Surfacer • Sealer • Seam sealer • Chip guard • Putty

Achievement Criteria

Performance	The learner will apply repair materials.
Conditions	The learner will be given: • Imperfection to repair • Various repair materials • Access to manufacturers' specifications
Criteria	The learner will be evaluated on: • Safety • Housekeeping • Selection of tool • Technique • Quality of repair

Line (GAC): F USE REPAIR MATERIALS

Competency: F3 Apply corrosion protection

Objectives

To be competent in this area, the individual must be able to:

- Describe corrosion.
- Apply corrosion protection.

LEARNING TASKS	CONTENT
1. Describe corrosion	• Oxidation • Moisture • Electrolyte • Effects on structural integrity • Exposed metal ○ Hot spots
2. Describe galvanic corrosion	• Dissimilar metal contact • Chemical reactivity • Relationship to sacrificial corrosion
3. Describe sacrificial corrosion	• Galvanized metals • Zinc enriched materials • Relationship to galvanic corrosion • Sacrificial metals chart

4. Describe corrosion protection products	• Primers
	  ○ Epoxy
	  ○ Weld-through primer
	  ○ Etch primer
	  ○ Direct-to-metal (DTM)
	• Seam sealers
	• Metal conditioners
	• Conversion coatings
	• Wax based
	• Urethane based
	• Petroleum based undercoating
	  ○ Rubberized
	• Chip guards
	• Washers
	• Insulators
	• Dissimilar metal compound

LEARNING TASKS	CONTENT
5. Describe corrosion protection requirements	• SDS • OEM • Warranty • Liability

6. Apply corrosion protection	• Vehicle components or areas requiring corrosion protection
	  ○ Enclosed interior surfaces
	  ○ Exposed interior surfaces
	  ○ Exposed exterior surfaces
	  ○ Exposed joints
	• Procedures
	  ○ Safe handling
	  ○ Application methods
	• Product selection
	• Tools
	  ○ Spray gun
	  ○ Sealing gun
	  ○ Aerosol
	  ○ Undercoat gun
	  ○ Spray wand
	  ○ Brush
	• Timelines
	• Shop policy

Achievement Criteria

Performance	The learner will apply corrosion protection.
Conditions	The learner will be given: • Vehicle or panel requiring corrosion protection • Corrosion protection materials • Application tools • Access to SDS
Criteria	The learner will be evaluated on: • Safety • Material selection • Application of corrosion protection

Line (GAC): G USE EQUIPMENT

Competency: G1 Use spray guns

Objectives

To be competent in this area, the individual must be able to use spray guns to apply primer/undercoats.

LEARNING TASKS	CONTENT
1. Select spray guns	• Types of materials • Types of guns
2. Set up spray guns	• Fluid tips • Needle • Air caps • Air pressure • Fan adjustment • Fluid adjustment

3. Use spray guns	• Test patterns
	• Troubleshooting gun operation
	• Techniques
	  ○ Overlap
	  ○ Pressure
	  ○ Gun distance
	  ○ Travel speed
	  ○ Gun position
	  ○ Trigger control
	• Atomization
	• Transfer efficiency
	• Cleaning (see B3)

Achievement Criteria

Performance: The learner will use spray guns to apply primer/undercoats.

Conditions: The learner will be given:

- A surface to prime
- Various spray equipment
- Access to paint and gun manufacturers' specifications
- Primer/undercoat

Criteria: The learner will be evaluated on:

- Safety
- Technique
- Quality of finished product
- Cleaning of equipment

Line (GAC): G USE EQUIPMENT

Competency: G2 Operate spray booth

Objectives

To be competent in this area, the individual must be able to operate a spray booth.

LEARNING TASKS	CONTENT

1. Describe spray booth operation	• Overall function of spray booth
	  ○ Environmental considerations
	  ○ Cost-effectiveness
	  ○ Job quality
	• Climate control
	• Cycles
	  ○ Spray
	  ○ Purge
	  ○ Bake
	  ○ Cool down
	• Pressure adjustment
	  ○ Negative
	  ○ Positive
	• Temperature adjustment
	• Air flow
	• Interlock switch

2. Operate a spray booth	• Utilize spray booth space
	  ○ Vehicle positioning
	  ○ Parts placement
	• Inspect operating parameters
	• Manage operation
	  ○ Temperature
	  ○ Pressure
	  ○ Troubleshoot problems
	• Monitor humidity
	• Maintain spray booth (see B2)

Achievement Criteria

Performance	The learner will operate a spray booth.
Conditions	The learner will be given: • A part or vehicle • Access to a booth • Manometer or magnehelic • Access to booth manufacturers' recommendations
Criteria	The learner will be evaluated on: • Safety • Placement of part or vehicle in the booth • Achieving the correct settings • Housekeeping

Line (GAC): G USE EQUIPMENT

Competency: G3 Operate drying and curing equipment

Objectives

To be competent in this area, the individual must be able to:

- Describe the drying and curing process.
- Operate drying and curing equipment.

LEARNING TASKS	CONTENT
1. Describe the drying and curing process	• Drying vs. curing • Evaporation • Oxidation • Cross-link • Thermoset • Thermoplastic • Flash time • Productivity

2. Describe drying and curing equipment	• Types
	  ○ Infra-red
	  ○ UV
	  ○ Forced air
	• Thermometers

3. Operate drying and curing equipment	• Paint manufacturers' recommendations
	• Vehicle protection
	• Distance
	• Time
	• Temperature
	  ○ Surface
	  ○ Metal
	  ○ Cool down

Achievement Criteria

Performance: The learner will select and operate drying and curing equipment.

Conditions: The learner will be given:

- Vehicle or component in need of drying or curing
- Access to drying and curing equipment
- Access to paint and equipment manufacturers' recommendations

Criteria: The learner will be evaluated on:

- Safety
- Selection of drying and curing equipment
- Operation as per paint and equipment manufacturers' recommendations

Line (GAC): G USE EQUIPMENT

Competency: G4 Use paint manufacturers' software and equipment

Objectives

To be competent in this area, the individual must be able to use paint manufacturers' software and equipment.

LEARNING TASKS	CONTENT

1. Describe paint manufacturers' software and equipment	• Software
	  ○ Applications (Apps)
	  ○ Technical data sheets (TDS)
	  ○ SDS
	  ○ Mixing ratios
	  ○ Tracking
	  - Product inventory
	  - Product usage
	  - VOC
	  - Cost
	• Equipment
	  ○ Computers
	  ○ Scales
	  ○ Agitating machines
	  ○ Mixing sticks

2. Use paint manufacturers' software and equipment	• Navigating software • Updating software • Mixing product • Equipment maintenance (See B3)

Achievement Criteria

Performance	The learner will use paint manufacturers' software and equipment.
Conditions	The learner will be given access to paint manufacturers' software and equipment.
Criteria	The learner will be evaluated on: • Safety • Housekeeping • Use of software • Use of equipment

Line (GAC): I PERFORM PRE-DELIVERY TASKS

Competency: I1 Remove surface imperfections

Objectives

To be competent in this area, the individual must be able to:

- Recognize post-paint defects.
- Perform basic paint polish.

LEARNING TASKS	CONTENT
1. Describe paint polish tools and equipment	• Pads • Compounds • Machines

2. Recognize post-paint defects	• Dust nibs
	• Runs
	• Orange peel
	• Fish eyes
	• Solvent pop
	• Dye-back
	• Scratches
	• Contour mapping
	• Bleed-through
	• Masking problems
	  ○ Over-spray/under-mask
	  ○ Over-mask
	• Colour mis-match
	• Mottling
	• Transparency

3. Perform paint polish	• Purpose
	  ○ Blend
	  ○ Colour match
	  ○ Surface rejuvenation
	• Equipment operation
	  ○ Speed
	  ○ Pressure
	  ○ Angle
	  ○ RPM
	  ○ Heat

Achievement Criteria

Performance	The learner will perform a basic polish.
Conditions	The learner will be given: • Vehicle or component to polish • Polishing tools and equipment
Criteria	The learner will be evaluated on: • Safety • Product selection • Quality of polishing • Equipment use

Line (GAC): I PERFORM PRE-DELIVERY TASKS

Competency: I2 Install trim and accessories

Objectives

To be competent in this area, the individual must be able to install trim and accessories.

LEARNING TASKS	CONTENT
1. Install trim and accessories	• Prep (See E1) • Tools • Fasteners • Adhesives • Sequence to install • Prepare trim and accessories for installation • Fresh paint considerations • Protect surfaces

Achievement Criteria

Performance	The learner will install trim and accessories.
Conditions	The learner will be given: • Vehicle • Trim and accessories • Tools
Criteria	The learner will be evaluated on: • Safety • Method of installation • Fit and finish

Automotive Painter

(Automotive Refinishing Technician)

Line (GAC): D PLAN WORK

Competency: D1 Perform inspection

Objectives

To be competent in this area, the individual must be able to evaluate the refinish area to determine next steps.

LEARNING TASKS	CONTENT

1. Evaluate the refinish area to determine next steps	• Review work order
	  ○ Work complete
	  ○ Parts are present
	  ○ Parts have been prepped
	• Blend panel
	• Shop standards
	• Defects
	  ○ Sand scratches
	  ○ Colour mismatch
	  ○ Sand through
	  ○ Under-sanding
	  ○ Chips
	  ○ Pinholes
	  ○ Under-mask
	  ○ Over-mask

Achievement Criteria

Performance	The learner will perform refinish area evaluations on various surfaces.
Conditions	The learner will be given refinish areas to assess.
Criteria	The learner will be evaluated on accuracy of evaluations.

Line (GAC): D PLAN WORK

Competency: D2 Contribute to development of repair estimate

Objectives

To be competent in this area, the individual must be able to contribute to the development of repair estimate.

LEARNING TASKS	CONTENT
1. Describe repair estimate	• Outlines all work to be performed • Developed by estimator in consultation with refinishing staff
2. Identify type of finish	• Single stage • Two-stage • Multi-stage • Two-tone • Texture • Gloss level • Previous repairs
3. Identify blend requirements	• Size of repair • Locations • Adjacent panels • Previous colour match • Condition of blend panels • Panel to panel • Cut-off points

4. Contribute to the development of the repair estimate	• Painter advises on:
	  ○ Finish
	  ○ Blend requirements

Achievement Criteria

Performance The learner will create a repair estimate.

Conditions The learner will be given:

- Damaged vehicle
- Repair estimate software

Criteria The learner will be evaluated on accuracy of the repair estimate.

Line (GAC): D PLAN WORK

Competency: D3 Organize production schedule

Objectives

To be competent in this area, the individual must be able to describe the development of a production schedule.

LEARNING TASKS	CONTENT
1. Describe production schedules	• Description of work in progress (WIP) • Sequence of WIP • Target timelines

2. Describe development of a production schedule	• Shop management system
	• Cycle times
	• Customer expectations
	• Insurance expectations
	• Parts availability
	• Booth management
	• Communicate with:
	  ○ Partsperson
	  ○ Prep technician
	  ○ Repair technician
	  ○ Production manager
	  ○ Detailer
	  ○ Customer

3. Describe the maintenance of a production schedule	• Update • Department communication • Re-work

Achievement Criteria

Performance	The learner will prepare a production schedule.
Conditions	The learner will be given: • Multiple vehicles or components • Multiple work orders • Delivery dates
Criteria	The learner will be evaluated on completeness and effectiveness of the production schedule.

Line (GAC): E PREPARE SURFACE

Competency: E1 Prepare vehicle for refinishing

Objectives

To be competent in this area, the individual must be able to prepare a panel for paint.

LEARNING TASKS	CONTENT

1. Prepare a vehicle for refinishing	• Blow off
	  ○ Interior
	  ○ Exterior
	• Solvent clean
	• Mask
	• Final wipe
	• Anti-static
	• Tack
	• Final visual inspection

Achievement Criteria

Performance	The learner will prepare a vehicle for paint.
Conditions	The learner will be given: • A vehicle or component • A work order • Cleaning materials • Required tools
Criteria	The learner will be evaluated on: • Safety • Material selection • Cleaning technique

Line (GAC): H USE REFINISHING MATERIAL

Competency: H1 Mix paint

Objectives

To be competent in this area, the individual must be able to:

- Describe paint and additives.
- Mix paint.

LEARNING TASKS	CONTENT

1. Describe paint	• Types
	  ○ Water-borne
	  ○ Solvent-based
	• Components
	  ○ Toners
	  ○ Binders
	  ○ Resins
	  ○ UV screeners
	• Clear coats
	  ○ Nano-technology
	  ○ Scratch-resistant
	  ○ Ceramic
	• Sealers
	  ○ Tintable
	  ○ Non-tintable
	  ○ Plastic
	  ○ Transparent
	• Powder coating
	• Pigments
	  ○ Metallics
	  ○ Pearls
	  ○ Micas
	  ○ Xirallic
	  ○ Talc
	  ○ Flex (colour-shift)
	  ○ Dyes
	• Functions/characteristics
	  ○ Durability
	  ○ UV protection
	  ○ Colour
	  ○ Adhesion
	  ○ Gloss
	  ○ Dry time

LEARNING TASKS	CONTENT
	○ Evaporation rate ○ Reductions ○ Curing ○ Water-resistance ○ Chemical resistance • Handling ○ Disposal ○ Storage
2. Describe additives	• Flattening agents • Blending agents • Fish eye eliminators • Accelerators • Retarders • Solvents • Hardeners ○ Base coat catalyzers ○ Isocyanates/crosslinking • Handling ○ Disposal ○ Storage
3. Perform mixing procedures	• Manufacturers' specifications • Equipment selection • Product selection • Amounts • Computerized tracking ○ Costs ○ Paint codes ○ Mix history ○ Custom formulas ○ Overpour compensation ○ VOC usage ○ Inventory ○ Mix ratios ○ Colour adjustment ○ Ground coat (value shade) • Mixing cups ○ Straining • Mixing sticks • Agitation • Housekeeping

Achievement Criteria 1

Performance	The learner will mix paint manually.
Conditions	The learner will be given: • Hard copy of formula and quantity • Manufacturers' specifications (TDS) • Materials and equipment
Criteria	The learner will be evaluated on: • Safety • Accuracy • Efficiency • Housekeeping

Achievement Criteria 2

Performance	The learner will mix paint using manufacturers' software.
Conditions	The learner will be given: • Vehicle • Paint code and quantity • Materials and equipment
Criteria	The learner will be evaluated on: • Safety • Accuracy • Efficiency • Housekeeping

Line (GAC): H USE REFINISHING MATERIAL

Competency: H2 Perform colour matching

Objectives

To be competent in this area, the individual must be able to:

- Describe colour theory.
- Describe colour matching.

LEARNING TASKS	CONTENT

1. Describe colour theory	• Value
	• Hue
	• Chroma
	• Colour spectrum (ROYGBIV)
	• Primary and secondary colours
	• Low and high strength colours
	• Face, pitch, and flop of colour
	• Variance
	  ○ OEM level
	  ○ Industry level
	• Light source
	• Metamerism
	• Colour-perception testing
	• Equipment
	  ○ Spectrophotometer
	  ○ Sun gun

2. Describe colour matching	• Sun gun • Spray out card • Let down panel • Draw down • Colour chips • Variance deck • Colour formula adjustments • Formula parameters • Tint characteristics • Comparison of colour to vehicle • Adequate hiding

Line (GAC): H USE REFINISHING MATERIAL

Competency: H3 Apply refinishing materials

Objectives

To be competent in this area, the individual must be able to:

- Describe topcoat application techniques.
- Apply topcoats.

LEARNING TASKS	CONTENT

1. Describe topcoat application techniques	• Spray techniques
	  ○ Distance
	  ○ Overlap
	  ○ Gun speed
	  ○ Trigger control
	  ○ Air pressure
	  ○ Fanning/arcing
	  ○ Heeling
	• Job size
	  ○ Spot repair
	  ○ Partials
	  ○ Complete
	• Spray sequence
	  ○ Routing
	  ○ Wet edge
	• Tricoat
	  ○ Let down panel
	  ○ Specialty/candy
	• Tacking between coats
	• Blending
	  ○ Orientation coat
	  ○ Wet bed
	  ○ Open blend (solvent blend)
	• Matte finishes
	• Textured finishes

2. Apply topcoats	• Manufacturers' specifications
	  ○ Single stage
	  ○ Two stage
	  ○ Multi stage
	  ○ Suggested techniques
	  ○ Flash time
	• Material selection
	  ○ Solvent
	  ○ Hardeners

LEARNING TASKS	CONTENT
	○ Additives ○ Value shade • Gun selection • Booth set up ○ Settings ○ Vehicle/parts positioning • Spray out card • Spray topcoats

Achievement Criteria 1

Performance — The learner will perform refinishing procedures, such as:
- Spot
- Partial
- Complete

Conditions — The learner will be given:
- Vehicle or component
- Material and equipment
- Access to manufacturers' specifications

Criteria — The learner will be evaluated on:
- Safety
- Quality
- Coverage
- Mil thickness
- Application technique
- Housekeeping

Achievement Criteria 2

Performance — The learner will apply refinishing materials, such as:
- Sealer
- Single stage
- Base coat/clear coat
- Multi-stage

Conditions — The learner will be given:
- Vehicle or component
- Material and equipment
- Access to manufacturers' specifications

Criteria — The learner will be evaluated on:
- Safety
- Quality
- Coverage
- Mil thickness
- Application technique
- Housekeeping

Line (GAC): H USE REFINISHING MATERIAL

Competency: H4 Troubleshoot paint problems

Objectives

To be competent in this area, the individual must be able to:

- Describe paint problems and their causes.
- Describe methods for correcting paint problems.

LEARNING TASKS	CONTENT
1. Describe paint problems	• Orange peel • Sags and runs • Dry spray • Sand piling • Mismatch • Fish eyes • Dirt nibs • Delamination • Soft paint • Die back • Solvent trapping • Halo • Mottling • Wrinkling • Sand scratches • Checking • Staining • Blushing • Contour mapping • Topcoat absorption (hold out) • Overspray • Customer satisfaction

2. Describe causes of paint problems	• Contamination
	  ○ Dirty equipment
	  ○ Environment
	  ○ Painter
	  ○ Improper cleaning
	• Poor spray technique
	• Improper mixing procedures
	• Inter-mixing of products

LEARNING TASKS	CONTENT
	• Expired product • Poor equipment • Poor booth conditions • Taking short cuts • Miscommunications

3. Desribe methods of correcting paint problems	• Prevention
	  ○ Good work habits
	  ○ Product knowledge
	  ○ Preparation technique
	  ○ Equipment knowledge
	  ○ Corrosion protection
	  ○ Application technique
	  ○ Substrate knowledge
	  ○ Mil thickness
	  ○ Standard Operating Procedures (SOPs)
	  ○ Training
	  ○ Housekeeping
	• During spraying
	  ○ Fish eye eliminator
	  ○ Sanding
	  ○ Tacking
	  ○ Taping
	  ○ Re-coat
	  ○ Adjust
	  - Application technique
	  - Environmental conditions
	  - Equipment
	  - Material

Line (GAC): I PERFORM PRE-DELIVERY TASKS

Competency: I1 Remove surface imperfections

Objectives

To be competent in this area, the individual must be able to:

- Evaluate surface imperfections.
- Remove surface imperfections.

LEARNING TASKS	CONTENT
1. Evaluate surface imperfections	• Repairable • Non-repairable

2. Remove surface imperfections	• Wet sanding
	  ○ De-nib
	  ○ Block
	  ○ Hand
	  ○ Machine
	• Solvents
	• Steel wool
	• Compounding
	• Polishing
	• Tools
	  ○ Razor blades
	  ○ Nib files
	  ○ Clay product
	  ○ Polishers

Achievement Criteria

Performance	The learner will remove surface imperfections, such as nibs, runs and orange peel.
Conditions	The learner will be given: • Vehicle or component with surface imperfection • Materials and equipment • Access to manufacturers' specifications
Criteria	The learner will be evaluated on: • Safety • Product and tool selection • Efficiency • Quality of repair • Housekeeping

Line (GAC): I PERFORM PRE-DELIVERY TASKS

Competency: I3 Apply decals and striping

Objectives

To be competent in this area, the individual must be able to:

- Remove decals and striping.
- Apply decals and striping.

LEARNING TASKS	CONTENT

1. Describe decals and striping	• Decals
	  ○ OEM
	  ○ Aftermarket
	  ○ Vinyl
	  ○ Clear (OEM stone guard)
	  ○ Applique (black-out tape)
	  ○ Pressure sensitive
	  ○ Reactive (adhesive)
	• Striping
	  ○ Accent stripes

2. Remove decals and striping	• Eraser wheel • Heat gun • Plastic razor blade • Release solvent

3. Apply decals and striping	• Clean surface
	• Cured surface
	• Decal location
	• Backer removal
	• Surface temperature
	• Manufacturers' specifications
	• Remove air bubbles
	• Wet set
	• Dry set
	• Equipment and materials
	  ○ Plastic razor blade/spreader
	  ○ Detergent
	  ○ Alcohol
	  ○ Water
	  ○ Tape
	  ○ Squeegee
	  ○ Knife
	  ○ Heat gun

LEARNING TASKS	CONTENT

	• Application techniques
	  ○ Sequence
	  ○ Hinge method

4. Describe wrapping	• Full body graphic • Paint protection film

Achievement Criteria

Performance — The learner will remove and install decals and stripes.

Conditions — The learner will be given:

- Access to a vehicle
- Decals
- Decal removal materials and equipment
- Decal installation materials and equipment
- Access to manufacturers' specifications

Criteria — The learner will be evaluated on:

- Safety
- Quality of decal and stripe removal
- Quality of decal and stripe application
- Housekeeping

Line (GAC): I PERFORM PRE-DELIVERY TASKS

Competency: I4 Perform final check

Objectives

To be competent in this area, the individual must be able to perform a final check.

LEARNING TASKS

1. Perform a final check

CONTENT

- Completion of work order
- Completion of job pre-delivery checklist
  - Contents
  - Importance
  - Quality standard
  - Customer relations
- Colour match
- Overspray
- Blend areas
- Polish residue

Achievement Criteria

Performance	The learner will perform a final check.
Conditions	The learner will be given: • Refinished vehicle or component • Work order • Pre-delivery checklist
Criteria	The learner will be evaluated on: • Efficiency • Accuracy • Thoroughness of final check

Section 4

TRAINING PROVIDER STANDARDS

Facility Requirements

Classroom Area

- Comfortable seating and tables suitable for training, teaching, and lecturing
- Compliance with all local and national fire codes and occupational safety requirements
- Windows must have shades or blinds to adjust sunlight
- Heating/Air Conditioning for comfort all year round
- The minimum requirements are a well heated and ventilated classroom 900 square feet (e.g. 30' x 30') with tables and chairs suitable for adults
- The classroom should be equipped with a large whiteboard (4' x 8'), a flip chart, a white matte screen (6 or 7 ft.), an overhead projector, and a TV/VCR
- Note: A multi-media projector with laptop computer is advisable but optional

Shop Area

- 3,000 square feet for 12 students
- 4,000 square feet for 14 students
- 5,000 square feet for 16 students
- Ceiling must be a minimum height of 16' or height approved through the building engineer
- Appropriate lifting devices (hoists) used in industry
- Suitable demonstration area
- Lighting appropriate for good vision in ambient light
- Compliance with all local and national fire codes and occupational safety requirements
- Must meet municipal and provincial bylaws in regards to waste water management and environmental laws
- Adequate hoist to student ratio

Tools and Equipment

Standard Tool Kit

- Air powered tool
- Air pressure gauge
- Blow gun
- Clip removal tool
- Decal removal tool
- Drill
- Dual action sander
- File
- Grinder
- Hand cutting tool
- Hand tool
- Heat gun
- Plastic spreader
- Putty board
- Putty knife
- Ratchet socket
- Rubber squeegee
- Sanding block
- Sanding board
- Screwdriver
- Socket wrench
- Socket
- Sponge block
- Spray bottle
- Stop watch
- Tape measure
- Tire chuck
- Trim removing tool
- Trouble light
- Tweezers
- Upholstery tool

Safety and First Aid Equipment

- Disposal containers
- Dust extraction equipment
- Dust mask
- Ear protectors
- Explosion proof room
- Explosion proof wiring
- Eye wash station
- Fire extinguishers
- First aid kit
- Gloves (work & rubber)
- Goggles
- Invisible glove
- Paint suit
- Protective clothing
- Respirator (air purifying)
- Respirator (air supplied)
- Safety eyewear
- Safety footwear
- Spill kits

Refinishing Equipment

- Air brush
- Anti-static devices
- Automatic gun washing system
- Blow gun
- Colour chips
- Colour corrective bulbs
- Computer and software
- Curing lamps
- Film thickness gauge (wet and dry)
- Gravel guard gun
- Ground cable
- Gun washer
- Heat lamps
- Liquid mask
- Measuring sticks
- Microfiche reader
- Mixing cups
- Mixing machine
- Mixing scales
- Mixing sticks
- Oilless compressor
- Paint shaker
- Paint strainers
- Pressure washers
- Schutz gun
- Solvent recycler
- Spectrophotometer
- Spray booth
- Spray gun (electrostatic)
- Spray gun (gravity feed)
- Spray gun (HVLP)
- Spray gun (LVLP)
- Spray gun (pressure pot system)
- Spray gun (suction feed)
- Spray out cards
- Thermometer
- UV lamps
- Variant cards
- Viscosity cups

Detailing and Cleaning Equipment

- Abrasive pad
- Anti-corrosive applicator
- Buffer pad
- Buffer/polisher
- Cleaning brush
- Cleaning clothes
- Cleaning equipment
- Cleaning solutions
- Interior cleaner
- Magnifying glass
- Moulding cutter
- Polisher
- Razor blade
- Razor blade holder
- Run-nib file
- Spray bottle
- Stripe cutter
- Tack cloths
- Vacuum cleaner

Shop Equipment

- Air compressor
- Air dryer
- Air hoses
- Air makeup system
- Air transformer
- Axle stand
- Brooms
- Caulking gun (manual/air)
- Floor jack
- Floor squeegees
- Hangers
- Hoist
- Manometer
- Masking cart
- Media blasting equipment
- Moisture trap
- Moulding remover
- Parts and bumper stands
- Plastic rivet gun
- Pneumatic sanders
- Pressure washer
- Regulators
- Solvent recycler
- Spreaders
- Stands
- Step ladders
- Windshield removing tools
- Wire brush

Student Tools (supplied by student)

Required

- CSA approved safety glasses
- CSA approved footwear
- Coveralls

Recommended

- Gun (Automotive Painter (Automotive Refinishing Technician))

Reference Materials

Required Reference Materials

N/A

Recommended Resources

N/A

Suggested Texts

- Auto Body Repair Technology (6th Edition), James E. Duffy
- Collision Repair and Refinishing (2nd Edition), Thomas and Jund
- I-Car, https://www.i-car.ca/

NOTE:

This list of Reference Materials is for training providers. Apprentices should contact their preferred training provider for a list of recommended or required texts for this program.

Instructor Requirements

Occupation Qualification

The instructor must possess:

- Automotive Painter (*Automotive Refinishing Technician*) – Certificate of Qualification with Interprovincial Red Seal endorsement
  or
  Motor Vehicle Body Repairer (Metal & Paint)(Automotive Collision Repair Technician) – Certificate of Qualification with Interprovincial Red Seal endorsement

Work Experience

- A minimum of 5 years experience working in the industry as an Automotive Painter (*Automotive Refinishing Technician*) journeyperson
- Must have diverse Automotive Painter (*Automotive Refinishing Technician*) industry experience including experience in all competencies in this program
- Must have recent Automotive Painter (*Automotive Refinishing Technician*) trade experience

Instructional Experience and Education

It is preferred that the instructor also possesses one of the following:

- Provincial Instructor's Diploma, or be registered in the program to be completed within a five year period
- Instructors Certificate (minimum 30 hour course)
- Bachelors or Masters degree in Education

Appendices

Appendix A

Assessment Guidelines

Program: **Automotive Refinishing Prep Technician**

Training Provider Component: **In-School Technical Training**

Training providers delivering Automotive Refinishing Prep Technician apprenticeship in-school technical training are required to enter the following information in SkilledTradesBC Portal for each apprentice:

- An in-school mark in the form of a percentage

Calculation tables showing the subject competencies, level percentage weightings and level examination weightings are shown in the Grading Sheet: "Subject Competencies and Weightings" section of this document.

Automotive Refinishing Prep Technician in-school marks are calculated by:

- Totaling the level *theory* competency results as noted in the competencies and weightings tables and multiplying the total by 60% to produce a weighted *theory* result;
- Totaling the level *practical* competency results as noted in the competencies and weightings tables and multiplying the total by 40% to produce a weighted *practical* result;
- Adding the weighted theory and practical competency results together to determine the final in-school result. A mark of 70% or greater is required to pass the level and write the Certificate of Qualification exam.

SkilledTradesBC Certificate of Qualification Exam

In order to achieve certification, Automotive Refinishing Prep Technician apprentices are required to write the Automotive Refinishing Prep Technician SkilledTradesBC Certificate of Qualification exam after completing in-school technical training. Apprentices must have passed in-school technical training or be approved challengers to sit the exam. A score of 70% or greater is required for a pass.

SkilledTradesBC Certificate of Qualification exams should be requested by training providers via the usual SkilledTradesBC procedure.

SkilledTradesBC will administer and invigilate SkilledTradesBC Certificate of Qualification exams and score and record exam results in SkilledTradesBC Portal.

Grading Sheet: Subject Competency and Weightings

PROGRAM: IN-SCHOOL TRAINING: SKILLEDTRADESBC PORTAL CODE:	Automotive Refinishing Prep Technician (C of Q) 0224RP01		
LINE	**SUBJECT COMPETENCIES**	**THEORY WEIGHTING**	**PRACTICAL WEIGHTING**
A	PERFORM SAFETY-RELATED FUNCTIONS	15%	10%
B	MAINTAIN TOOLS AND EQUIPMENT	15%	15%
C	USE DOCUMENTATION	5%	0%
D	PLAN WORK	10%	5%
E	PREPARE SURFACE	20%	25%
F	USE REPAIR MATERIALS	15%	20%
G	USE EQUIPMENT	15%	20%
I	PERFORM PRE-DELIVERY TASKS	5%	5%
	Total	100%	100%
Calculated by the Training Provider **Automotive Refinishing Prep Technician** in-school theory & practical subject competency weighting		60%	40%
Training Provider enters final in-school mark into SkilledTradesBC Portal Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Automotive Refinishing Prep Technician Certificate of Qualification exam.		IN-SCHOOL FINAL %	

All apprentices who complete the Automotive Refinishing Prep Technician program with a FINAL level mark of 70% or greater will write the Automotive Refinishing Prep Technician Certificate of Qualification examination as their final assessment.

SkilledTradesBC will enter the apprentices' Automotive Refinishing Prep Technician Certificate of Qualification examination mark in SkilledTradesBC Portal. A minimum mark of 70% on the examination is required for a pass.

Program: **Automotive Painter (Automotive Refinishing Technician)**

Training Provider Component: **In-School Technical Training**

Training providers delivering Automotive Painter (Automotive Refinishing Technician) apprenticeship in-school technical training are required to enter the following information in SkilledTradesBC Portal for each apprentice:

- An in-school mark in the form of a percentage

Calculation tables showing the subject competencies, level percentage weightings and level examination weightings are shown in the Grading Sheet: "Subject Competencies and Weightings" section of this document.

Automotive Painter (Automotive Refinishing Technician) in-school marks are calculated by:

- Totaling the level *theory* competency results as noted in the competencies and weightings tables and multiplying the total by 35% to produce a weighted theory result;

- Totaling the level *practical* competency results as noted in the competencies and weightings tables and multiplying the total by 65% to produce a weighted practical result;

- Adding the weighted theory and practical competency results together to determine the final in-school result. A mark of 70% or greater is required to pass the level and write the Automotive Painter Red Seal exam.

Interprovincial Red Seal Exam

In order to achieve certification with the Red Seal Endorsement, Automotive Painter (Automotive Refinishing Technician) apprentices are required to write the Automotive Painter Interprovincial Red Seal exam after completing all levels of in-school technical training. Apprentices must have passed all levels of in-school technical training or be approved challengers to sit the exam. A score of 70% or greater is required for a pass.

Interprovincial Red Seal exams should be requested by training providers via the usual SkilledTradesBC procedure.

The SkilledTradesBC will administer and invigilate Interprovincial Red Seal exams and score and record exam results in SkilledTradesBC Portal.

Grading Sheet: **Subject Competency and Weightings**

PROGRAM: IN-SCHOOL TRAINING: SKILLEDTRADESBC PORTAL CODE:	Automotive Painter (Automotive Refinishing Technician) (RS) 0124PR01		
LINE	**SUBJECT COMPETENCIES**	**THEORY WEIGHTING**	**PRACTICAL WEIGHTING**
D	PLAN WORK	20%	15%
E	PREPARE SURFACE	5%	5%
H	USE REFINISHING MATERIAL	65%	60%
I	PERFORM PRE-DELIVERY TASKS	10%	20%
	Total	100%	100%
Calculated by the Training Provider **Automotive Painter (Automotive Refinishing Technician)** in-school theory & practical subject competency weighting		35%	65%
Training Provider enters final in-school mark into SkilledTradesBC Portal Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Automotive Painter Interprovincial Red Seal exam.		IN-SCHOOL FINAL %	

All apprentices who complete the Automotive Painter (Automotive Refinishing Technician) program with a FINAL level mark of 70% or greater will write the Automotive Painter Interprovincial Red Seal examination as their final assessment.

SkilledTradesBC will enter the apprentices' Automotive Painter Red Seal Interprovincial examination mark in SkilledTradesBC Portal. A minimum mark of 70% on the examination is required for a pass.

Appendix B

Glossary of Acronyms

Glossary of Acronyms used in this document

CSA	Canadian Standards Association
DTM	Direct To Metal
HVAC	Heating, Ventilation and Air Conditioning
JHA	Job Hazard Analysis
JT	Judgement Time
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
PASS	Pull, Aim, Squeeze, Sweep
PPE	Personal Protective Equipment
ROYGBIV	Red, Orange, Yellow, Green, Blue, Indigo, Violet
RPM	Revolutions Per Minute
SDS	Safety Data Sheet
SMC	Sheet Molding Compound
SOP	Standard Operating Procedure
SRS	Supplemental Restraint System
TDS	Technical Data Sheet
UV	Ultra Violet
VIN	Vehicle Identification Number
VOC	Volatile Organic Compound
WHMIS	Workplace Hazardous Materials Information System
WIP	Work In Progress