Apprenticeship and Industry Training

Painter and Decorator Curriculum Guide

004 (2022)





Apprenticeship and Industry Training

ALBERTA ADVANCED EDUCATION

Painter and decorator: apprenticeship education program curriculum guide

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Apprenticeship

Apprenticeship is post-secondary education with a difference. Apprenticeship begins with finding a sponsor. Sponsors guide apprentices, and support on-the-job learning through provision of mentorship. Approximately 80 per cent of an apprentice's time is spent on the job under the supervision of a certified journeyperson or qualified tradesperson. The other 20 per cent involves technical training provided at, or through, a post-secondary institution (PSI) – usually a college or technical institute.

To receive their post-secondary credential, apprentices must learn theory and skills, and they must pass examinations. Criteria for the program—including the content and delivery of technical training—are developed and updated by the Registrar.

The graduate of the Painter and Decorator apprenticeship education program is an individual who will be able to:

- apply coatings by brush, roller and spray to surfaces of wood, metal, brick, concrete, plaster, stucco and stone for decorative and protective purposes. This occurs in residential, commercial, institutional and industrial settings.
- apply wall coverings to surfaces in residential and commercial buildings.
- perform surface preparation on new and existing surfaces.
- be competent and proficient in the safe use of hand tools, power equipment and precision-built machinery.
- be familiar with and able to co-operate in the work of allied trades engaged in construction, building maintenance and home decoration.
- perform assigned tasks in accordance with safety, quality, environmental and production standards required by industry.
- calculate areas and relate these calculations to required material.

Apprenticeship and Industry Training System

Alberta's apprenticeship education programs are supported by industry stakeholders that ensures a highly skilled, internationally competitive workforce in the province. The Registrar establishes the educational standards and provides direction to the system supported by industry and the PSI's. The Ministry of Advanced Education provides the legislative framework and administrative support for the apprenticeship and industry training system.

Special thanks are offered to the following industry members who contributed to the development of the standard:

- Mr. S. Adams.....Edmonton
- Mr. M. Mahfouz Edmonton
- Mr. B, Picken Edmonton
- Mr. G. Rogers.....Sherwood Park
- Mr. M. DiluzioCalgary
- Mr. B. Pointon.....Calgary
- Mr. W. SzucsSpruce Grove
- Mr. D. WeaselchildSiksika

Alberta Government

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

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

Apprentice Safety

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

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

Occupational Health and Safety

Persons engaged in, or supporting an individual in an experiential learning environment are often exposed to more worksite hazards than in other forms of traditional post-secondary education and therefore should be familiar with and apply the Occupational Health and Safety Act, Regulations and Code when dealing with personal safety and the special safety rules that apply to all daily tasks.

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

Additional information is available at www.alberta.ca/occupational-health-safety.aspx

Technical Training

Apprenticeship technical training is delivered by the PSI's throughout Alberta. The PSI's are committed to delivering the technical training component of Alberta apprenticeship programs in a safe, efficient and effective manner. All PSI's place a strong emphasis on safety that complements safe workplace practices towards the development of a culture of safety for all professions.

The PSI's work with industry and Alberta Advanced Education to enhance access and responsiveness to industry needs through the delivery of the technical training component of apprenticeship programs across the province. They develop curriculum from the curriculum guides established by the Registrar in consultation with the PSI's and industry and provide the technical training to apprentices.

The following PSI's deliver Painter and Decorator trade apprenticeship technical training:

Northern Alberta Institute of Technology Southern Alberta Institute of Technology

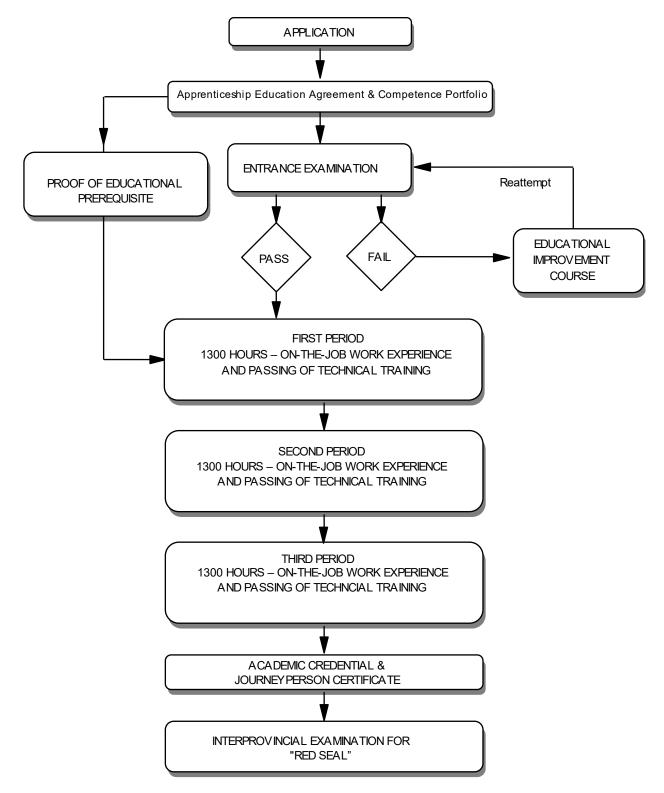
Procedures for Recommending Revisions to the Curriculum Guide

Any concerned individual or group in the province of Alberta may make recommendations for change by writing to:

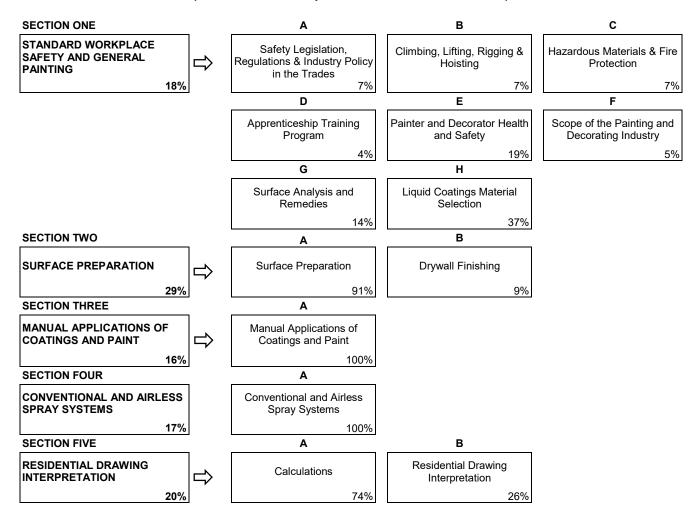
Registrar of Apprenticeship Education Programs c/o Apprenticeship Delivery and Industry Support Services Apprenticeship Delivery and Industry Support Advanced Education 19th floor, Commerce Place 10155 102 Street NW Edmonton AB T5J 4L5

It is requested that recommendations for change refer to specific areas and state references used.

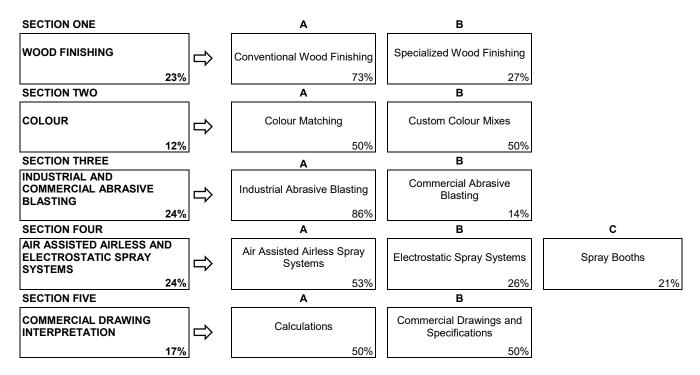
Apprenticeship Route toward Academic Credential



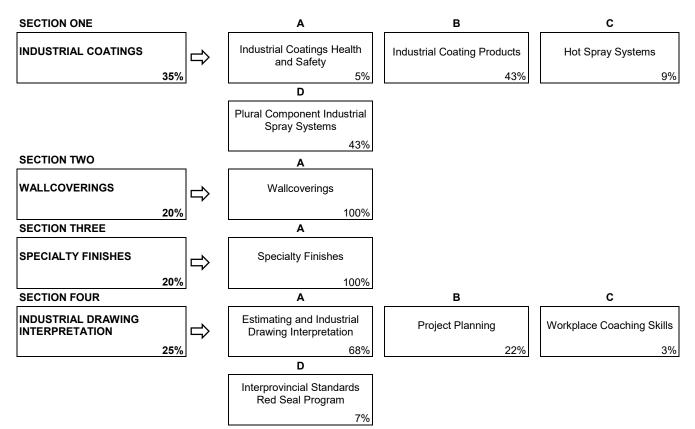
Painter and Decorator Training Profile FIRST PERIOD (8 Weeks 30 Hours per Week – Total of 240 Hours)



SECOND PERIOD (8 Weeks 30 Hours per Week – Total of 240 Hours)



THIRD PERIOD (8 Weeks 30 Hours per Week – Total of 240 Hours)



FIRST PERIOD TECHNICAL TRAINING PAINTER AND DECORATOR TRADE CURRICULUM GUIDE

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

SEC		E:STANDARD WORKPLACE SAFETY AND GENERAL PAINTING
Α.	Safety L	egislation, Regulations & Industry Policy in the Trades7%
	Outcom	e: Apply legislation, regulations and practices ensuring safe work in this trade.
	1.	Demonstrate the application of the Occupational Health and Safety Act, Regulation and Code.
	2.	Describe the sponsor's and employee's role with Occupational Health and Safety (OH&S) regulations, Worksite Hazardous Materials Information Systems (WHMIS), fire regulations, Workers Compensation Board regulations and related advisory bodies and agencies.
	3.	Describe industry practices for hazard assessment and control procedures.
	4.	Describe the responsibilities of workers and sponsors to apply emergency procedures.
	5.	Describe tradesperson attitudes with respect to housekeeping, personal protective equipment and emergency procedures.
	6.	Describe the roles and responsibilities of sponsors and employees with the selection and use of personal protective equipment (PPE).
	7.	Maintain required PPE for tasks.
	8.	Use required PPE for tasks.
В.	Climbing	g, Lifting, Rigging and Hoisting7%
Outcome: Use industry stand trade.		
	1.	Describe manual lifting procedures.
	2.	Describe rigging hardware and associated safety factors.
	3.	Select equipment for rigging loads.
	4.	Describe hoisting and load moving procedures.
	5.	Maintain personal protective equipment (PPE) for climbing, lifting and load moving equipment.
	6.	Use PPE for climbing, lifting and load moving equipment.
C.	Hazardo	us Materials & Fire Protection
	Outcom	e: Apply industry standard practices for hazardous materials and fire protection in this trade.
	1.	Describe roles, responsibilities, features and practices related to the Workplace Hazardous Materials Information System (WHMIS) program.
	2.	Describe three key elements of WHMIS.
	3.	Describe handling, storing and transporting procedures for hazardous material.

- 4. Describe venting procedures when working with hazardous materials.
- 5. Describe hazards, classes, procedures and equipment related to fire protection.

D.	Apprent	ceship Training Program	6
	Outcom	e: Manage an apprenticeship to earn journeyperson certification.	
	1.	Describe the contractual responsibilities of the apprentice, sponsor and Alberta Apprenticeship and Industry Training.	
	2.	Describe the purpose of the apprentice competency portfolio.	
	3.	Describe the procedure for changing sponsors during an active apprenticeship.	
	4.	Describe the purpose of the curriculum guide.	
	5.	Describe the procedure for progressing through an apprenticeship.	
	6.	Describe advancement opportunities in this trade.	
Е.	Painter a	and Decorator Health and Safety 19%	6
	Outcom	e: Demonstrate safe work practices.	
	1.	Describe requirements related to painting and decorating equipment and their safety measures.	
	2.	Detail the effects of LEEDS on the painting and decorating trade.	
	3.	Discuss environmental hazards including asbestos, lead and mold.	
	4.	Apply general Occupational Health and Safety Regulations pertaining to industrial coatings.	
F.	Scope o	f the Painting and Decorating Industry 5%	6
	Outcom	e: Identify the scope of the painting and decorating industry.	
	1.	Outline the scope of the trade.	
	2.	Describe painting and decorating terminology.	
	3.	Describe quality control programs for the residential, commercial and industrial painting and coatings industry.	
G.	Surface	Analysis and Remedies	6
	Outcom	e: Analyze substrates in preparation for painting or coating.	
	1.	Identify substrates found in the painting and coating industry.	
	2.	Describe types of substrate defects.	
	3.	Describe causes of substrate defects.	
	4.	Develop a course of remedial action for substrate defects.	
Н.	Liquid C	oatings Material Selection	6
	Outcom	e: Select liquid coatings for specific applications.	
	1.	Identify types of coatings and their primary functions.	
	2.	Identify prime, extender, colour pigments and their functions.	
	3.	Identify natural and synthetic resins and binders and their functions.	
	4.	Identify driers, catalysts, converters and their functions.	
	5.	Identify solvents, diluents and their functions.	

6. Interpret product technical data sheets.

SECTION TWO	SURFACE PREPARATION	
		049/

Outcome: Prepare surfaces for coating and painting.

- 1. Explain the functions of the tools used in the surface preparation process.
- 2. Select from natural and synthetic abrasives for each surface preparation process.
- 3. Describe removal of coatings and wall coverings from various substrates.
- 4. Describe types and uses for patching compounds.
- 5. Describe the surface preparation process and the finishing sequence for new and previously coated drywall surfaces.
- 6. Describe the surface preparation process and the finishing sequence for new and previously coated plaster surfaces.
- 7. Describe the surface preparation process and the finishing sequence for new and previously coated masonry surfaces.
- 8. Describe the surface preparation process and the finishing sequence for new and previously coated wood surfaces.
- 9. Describe the surface preparation process and the finishing sequence for new and previously coated ferrous and non-ferrous metal surfaces for industrial applications.
- 10. Identify causes of corrosion on substrates.
- 11. Describe surface preparation methods on damaged industrial coatings.
- 12. Perform surface preparation using solvents and chemicals.
- 13. Perform surface preparation using hand and power tools.
- 14. Prepare previously painted surfaces for the application of paint or coatings.
- 15. Prepare unpainted surfaces for the application of paint or coatings.
- 16. Prepare ferrous and non-ferrous surfaces for the application of paint or coatings.
- 17. Repair surface defects.
- 18. Remove coatings and wall coverings from various substrates.

Outcome: Finish drywall surfaces for painting and coating.

- 1. Describe tools required for drywall finishing.
- 2. Describe materials and procedures used for drywall finishing.
- 3. Demonstrate drywall finishing.

A. Manual Applications of Coatings and Paint 100%

Outcome: Apply coatings and paint using manual application methods.

- 1. Describe methods of mixing coatings and paint.
- 2. Describe types, uses and components of brushes.
- 3. Describe types, uses and components of rollers.

- 4. Describe types of alternate application tools and methods.
- 5. Apply coatings and paint using brushes to various substrates.
- 6. Apply coatings and paint using rollers to various substrates.
- 7. Apply coatings and paint using alternate application tools to various substrates.

SECTION FOUR: CONVENTIONAL AND AIRLESS SPRAY SYSTEMS...... 17%

A. Conventional and Airless Spray Systems 100%

Outcome: Operate conventional and airless spray equipment.

- 1. Identify the components of a conventional spray system.
- 2. Describe the operation and principles of conventional spray equipment.
- 3. Outline maintenance requirements for conventional spray equipment.
- 4. Identify the components of an airless spray system.
- 5. Describe the operation and principles of airless spray equipment.
- 6. Outline maintenance requirements for airless spray equipment.
- 7. Perform start up and shut down procedures for conventional spray equipment.
- 8. Demonstrate spraying techniques with conventional spray equipment.
- 9. Perform maintenance and troubleshooting on conventional spray equipment.
- 10. Perform start up and shut down procedures for airless spray equipment.
- 11. Demonstrate spraying techniques with airless spray equipment.
- 12. Perform maintenance and troubleshooting on airless spray equipment.

Outcome: Solve trade calculations in the Imperial and Metric systems.

- 1. Convert between the metric and imperial systems.
- 2. Utilize equations for projects.
- 3. Calculate the perimeter of two-dimensional geometric shapes.
- 4. Calculate the surface area of two-dimensional geometric shapes.
- 5. Estimate material quantities for surfaces.

Outcome: Interpret residential drawings.

- 1. Perform calculations derived from line drawings.
- 2. Interpret residential drawings.

SECOND PERIOD TECHNICAL TRAINING PAINTER AND DECORATOR TRADE CURRICULUM GUIDE

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

SE		IE:WOOD FINISHING	23%
Α.	Convent	tional Wood Finishing	73%
	Outcom	e: Finish wood surfaces.	
	1.	Identify soft and hard woods.	
	2.	Describe the physical properties of hard and soft woods.	
	3.	Describe surface preparation procedures for wood surfaces.	
	4.	Describe finishing procedures for wood surfaces.	
	5.	Identify wood finishing materials.	
	6.	Prepare an unfinished wood surface for finishing.	
	7.	Use colourants to match putty to stained wood samples.	
	8.	Apply finishes to prepared wood surfaces.	
	9.	Clean and store tools used for surface preparation and application.	
B.	Speciali	zed Wood Finishing	27%
	Outcom	e: Demonstrate specialized wood finishing procedures.	
	1.	Describe procedures used to repair damaged wood surfaces.	
	2.	Describe procedures used to refinish previously finished wood surfaces.	
	3.	Discuss procedures used to obtain a specialty finish on a wood surface.	
	4.	Demonstrate specialty finishing procedures including glazing, shading, and coloured lacquer.	
	5.	Repair damaged wood surfaces.	
	6.	Refinish previously finished wood surfaces.	
SE		/O	12%
А.	Colour N	Natching	50%
Outcome: Match		e: Match and mix colours for specific applications.	
	1.	Define colour terms.	
	2.	Explain the additive theory of colour.	
	3.	Explain the spectrum theory of colour.	
	4.	Explain the subtractive theory of colour.	
	5.	Discuss the psychological effects of colour.	
	6.	Design colour schemes using the MacDonald colour theory.	
	7.	Mix colours to match wet and dry colour samples.	

Β. Outcome: Use colourants to develop custom mixes. 1. Discuss colour tint systems. 2. Explain the physical characteristics of colourants. 3. Compare the toptone and undertone of colourants. 4. Discuss emerging colour matching systems. 5. Mix samples to match existing samples. 6. Construct a chart with colourants to compare toptones and undertones. 7. Use colourants to develop custom mixes. SECTION THREE INDUSTRIAL AND COMMERCIAL ABRASIVE BLASTING...... INDUSTRIAL AND COMMERCIAL ABRASIVE BLASTING...... Α. Prepare surfaces for industrial coatings using abrasive blasting. Outcome: 1. Describe codes, specifications and industry standards as they relate to surface preparation for industrial coatings. 2. Describe quality control and inspection as it applies to the industrial coatings industry. 3. Describe industrial abrasive blasting equipment. 4. Describe types of industrial abrasives and their applications. 5. Perform surface preparation using blast cleaning. 6. Perform maintenance on abrasive blasting equipment. В. Outcome: Prepare surfaces for industrial coatings using abrasive blasting. 1. Describe codes, specifications and industry standards as they relate to surface preparation for commercial coatings. Describe quality control and inspection as it applies to the commercial coatings industry. 2. 3. Describe commercial abrasive blasting equipment. 4. Describe types of commercial abrasives and their applications. 5. Perform surface preparation using commercial blast cleaning. 6. Perform maintenance on abrasive blasting equipment. Α. Outcome: Operate air assisted airless spray equipment. 1. Identify the components of an air assisted airless system. 2. Describe the operation of air assisted airless spray equipment. 3. Describe the uses of air assisted airless spray equipment.

- 4. Outline maintenance requirements for air assisted airless spray equipment.
- 5. Perform start up and shut down procedures for air assisted airless spray equipment.

	6.	Demonstrate spraying techniques for air assisted airless spray equipment.	
	7.	Perform maintenance and troubleshooting on air assisted airless spray equipment.	
В.	Electros	static Spray Systems	26%
	Outcom	ne: Operate electrostatic spray equipment.	
	1.	Identify the components of an electrostatic system.	
	2.	Describe the operation of electrostatic spray equipment.	
	3.	Describe the uses of electrostatic spray equipment.	
	4.	Outline maintenance requirements for electrostatic spray equipment.	
	5.	Perform start up and shut down procedures for electrostatic spray equipment.	
	6.	Demonstrate spraying techniques for electrostatic spray equipment.	
	7.	Perform maintenance and troubleshooting on electrostatic spray equipment.	
C.	Spray E	Booths	21%
	Outcom	ne: Operate spray booth systems.	
	1.	Describe the components of spray booth equipment.	
	2.	Describe the operation and maintenance of spray booth equipment.	
	3.	Operate and maintain a spray booth.	
SE	CTION FI	VE COMMERCIAL DRAWING INTERPRETATION	17%
Α.	Calcula	tions	50%
	Outcom	ne: Perform perimeter and area calculations on three-dimensional geometric shapes.	
	1.	Calculate the perimeter of three-dimensional geometric shapes.	
	2.	Calculate the surface area of three-dimensional geometric shapes.	
	3.	Calculate the volumetric capacity of three-dimensional geometric shapes.	
	4.	Complete wallcovering estimates using area and strip methods.	
В.	Comme	rcial Drawings and Schedules	50%
	Outcom	ne: Interpret information found in schedules and commercial drawings.	
	1.	Identify line types, symbols and notations used on drawings.	

- 2. Relate the information from schedules.
- 3. Complete quantity take-offs from commercial drawings and schedules.

THIRD PERIOD TECHNICAL TRAINING PAINTER AND DECORATOR TRADE CURRICULUM GUIDE

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

SE		NE:	5%
Α.	Indust	ial Coatings Health and Safety	5%
	Outcor	ne: Apply safety regulations for industrial coatings.	
	1.	Fit respiratory protection for industrial coatings applications.	
	2.	Explain confined space entry regulations.	
	3.	Describe Provincial hazardous waste disposal regulations.	
	4.	Review the Alberta Environmental Protection and Enhancement Act.	
В.	Indust	ial Coating Products4	3%
	Outco	ne: Apply knowledge of industrial coatings prior to use.	
	1.	Discuss methods for preparation, mixing, handling and storage of industrial coatings.	
	2.	Describe chemical compositions of industrial coatings.	
	3.	Detail the physical characteristics and uses for industrial coatings.	
	4.	Describe non-liquid industrial coatings.	
	5.	Describe technical data sheets and industry standards that apply to the preparation and mixing o industrial coatings.	f
C.	Hot Sp	ray Systems	€%
	Outcor	ne: Operate hot spray systems.	
	1.	Discuss the principles of viscosity control.	
	2.	Describe the components of hot spray equipment.	
	3.	Describe the operation and maintenance of hot spray equipment.	
	4.	Perform start up and shut down procedures for a hot spray system.	
	5.	Demonstrate spraying techniques for a hot spray system.	
	6.	Perform maintenance and troubleshooting on a hot spray system.	
D.	Plural	Component Industrial Spray Systems4	3%
	Outcor	ne: Use plural component spray equipment for industrial coatings applications.	
	1.	Discuss the principles of viscosity control.	
	2.	Identify the components of plural component spray systems.	
	3.	Describe the operation of plural component spray systems.	
	4.	Outline maintenance requirements for plural component spray systems.	
	5.	Perform start up and shut down procedures for plural component spray systems.	
	6.	Demonstrate spraying techniques with plural component spray systems.	
	7.	Inspect applied coatings for specification compliance.	
	8.	Perform maintenance and troubleshooting on plural component spray systems.	

THIRD PERIOD

SE		WO:WALLCOVERINGS	. 20%
A.	Wallco	overings	100%
	Outcon	ne: Apply wall coverings.	
	1.	Describe surface preparation procedures.	
	2.	Discuss types, patterns and dimensions of wallcoverings.	
	3.	Describe differences between residential and commercial wallcoverings.	
	4.	Discuss physical properties of adhesives.	
	5.	List tools used for wallcovering applications.	
	6.	Describe wallcovering application procedures.	
	7.	Prepare surfaces for the application of wallcovering.	
	8.	Apply wallcoverings to ceilings and walls.	
	9.	Clean, maintain and store wallcovering tools.	
SE		HREE: SPECIALTY FINISHES	20%
Α.	Special	Ity Finishes	100%
	Outcon	ne: Create specialty finishes.	
	1.	Describe preparations required for specialty finishing.	
	2.	Identify specialized tools.	
	3.	Explain the process for completing individual specialty finishes.	
	4.	Prepare surfaces for specialty finishes.	
	5.	Apply specialty finishes to prepared surfaces.	
	6.	Clean and store tools used for surface preparation and application.	
SE		OUR: INDUSTRIAL DRAWING INTERPRETATION	25%
Α.	Estima	ting and Industrial Drawing Interpretation	. 68%
	Outcon	ne: Develop estimates from industrial drawings and specifications.	
	1.	Estimate quantities of wallcovering.	
	2.	Estimate surface area from drawings.	
	3.	Calculate the amount of abrasive needed for surface preparation.	
	4.	Estimate coating material requirements based on drawings.	
	5.	Estimate production levels based on specific projects.	
	6.	Identify details from drawings.	
	7.	Identify details from project specifications.	
	8.	Correlate specifications with drawings.	
	9.	Describe the linear relationship between drawings, specifications and industrial and architectu standards.	ıral

В.	Project Planning		
	Outcom	e: Identify resources required for project completion.	
	1.	Identify equipment requirements for specific projects.	
	2.	Determine manpower requirements.	
	3.	Determine material quantities and types.	
	4.	Generate a scheduling sequence for a project.	
	5.	Develop a tiered cost estimate for a project.	
	6.	Describe the Alberta Blue Seal Program.	
C.	Workpl	ace Coaching Skills	3%
	<i>Outcome: Use coaching skills when training an apprentice.</i>		
	1.	Describe the process for coaching an apprentice.	
D.	Interpro	ovincial Standards Red Seal Program	7%
	Outco	me: Use Red Seal products to challenge an Interprovincial examination.	
	1.	Identify Red Seal products used to develop Interprovincial examinations.	

2. Use Red Seal products to prepare for an Interprovincial examination.



Apprenticeship and Industry Training

Alberta Trades. World Ready.