

Plumber

Transition Plan

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Abbreviations

CCDA	Canadian Council of Directors of Apprenticeship
CL	Current level (2009)
DA	Direct Access (ITA's registration system)
F2F	Face to face (a training delivery method)
FDN	Foundation program
HL	Harmonized level (April 2019)
IPSE	Interprovincial Red Seal Exam
NOA	Red Seal National Occupational Analysis
RSOS	Red Seal Occupational Standard; replaces NOA
SLE	Standardized Level Exam
TP	Training provider
TT	Technical training
TW	Trade worker
WBT	Work-based training

Introduction: Harmonization

The Canadian Council of Directors of Apprenticeship (CCDA) is responsible for the Red Seal Program, which develops common interprovincial standards and examinations. The CCDA is undertaking the Harmonization Initiative in 30 Red Seal trades by 2020. British Columbia is an active participant in this initiative.

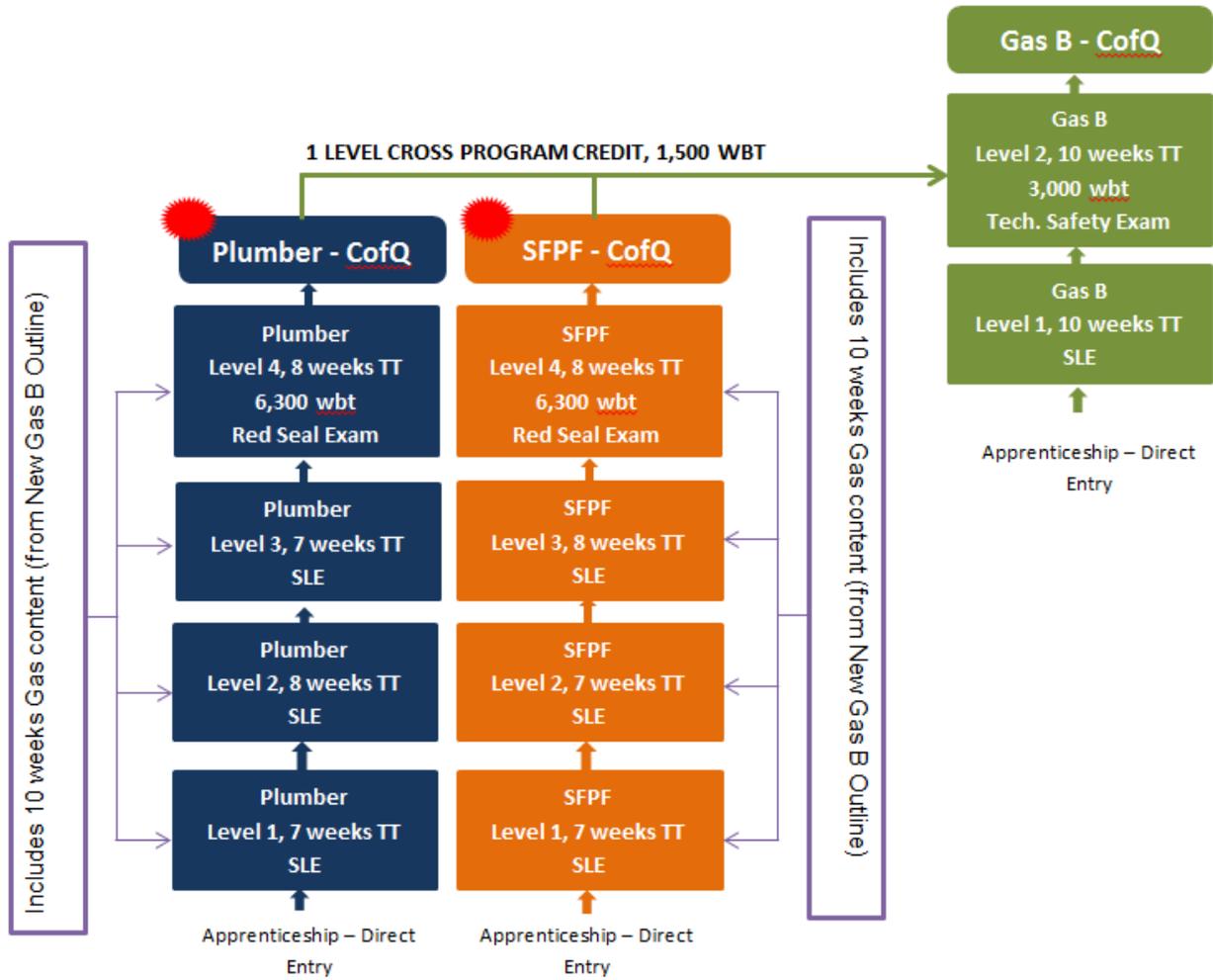
The goal is to substantively align apprenticeship systems across Canada by making apprenticeship training requirements more consistent in the Red Seal trades.

Harmonization Priorities

1. Use of Red Seal trade name
2. Consistent total training hours (in-school and on-the-job)
3. Same number of training levels
4. Consistent sequencing of training content, including use of most recent Red Seal Occupational Standard (RSOS).

What's changing for PLUMBER	Changing in BC?	What will it be?
TRADE NAME	NO	Plumber
NUMBER OF TRAINING LEVELS	NO	4
TOTAL HOURS technical + work-based training	YES	7200 hours
TRAINING SEQUENCE order of subjects taught	YES	Changes to sequence

Gas B Licensing Pathway – Harmonized Programs

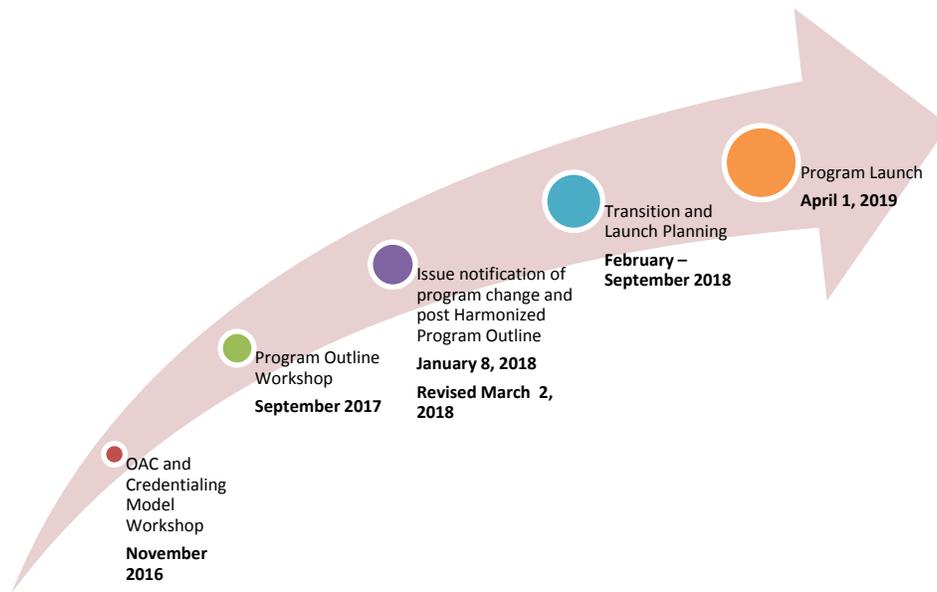


Transition Planning

The re-sequencing of the Plumber program through the Harmonization Initiative has resulted in significant changes to the sequencing of technical training.

We consulted with the 10 public and 2 private post-secondary institutions that deliver the Plumber program, and also considered the input of our internal partners. We evaluated a number of scenarios, and the transition plan outlined in this document was identified as the best option. We have also ensured that there are options for all current apprentices to complete their apprenticeship.

BC Program Development

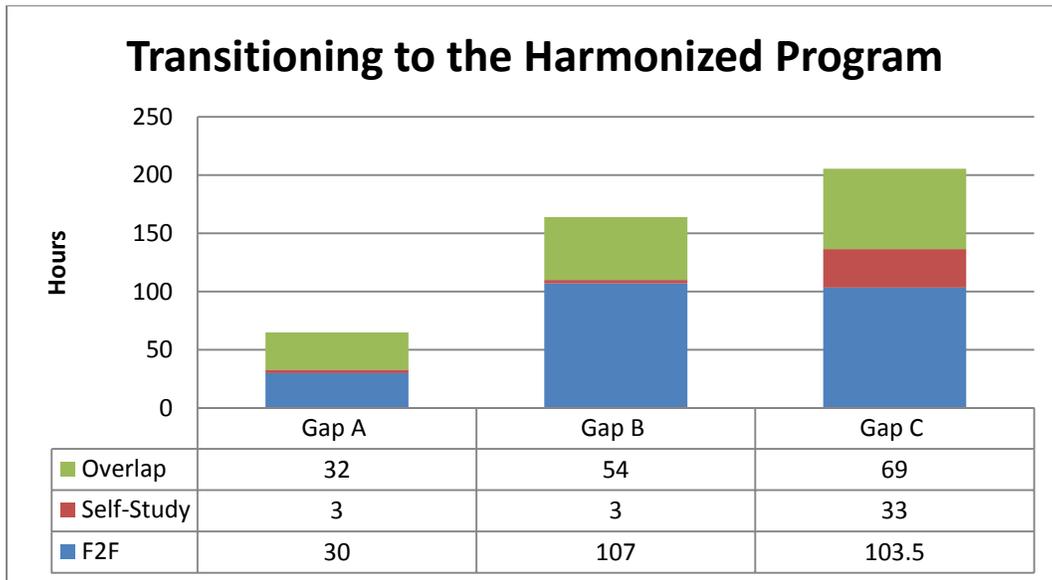


Training Providers (12)

BC Institute of Technology
Camosun College
College of New Caledonia
College of the Rockies
Kwantlen Polytechnic University
North Island College

Northern Lights College
Northwest Community College
Pacific Vocational College
Selkirk College
Thompson River University
UA Piping Industry College

The Gaps



Gap A (CL1→HL2) applies to a student who has completed Current Level 1 or Foundation and is moving into Harmonized Level 2.

Gap B (CL2→HL3) applies to a student who has completed Current Levels 1 & 2 and is moving into Harmonized Level 3.

Gap C (CL3→HL4) applies to a student who has completed Current Level 1, 2 & 3 and is moving into Harmonized Level 4.

Gap is an estimate of the hours of self-study and face-to-face instruction a student would need in order to complete the missing competencies if they transition to the harmonized program.

Overlap refers to the hours of content that a student who transitions to the harmonized program will be repeating.

Note: If a TW completes their training in the current program, they will not face a gap in their training. Gaps and overlaps only apply to apprentices who miss their opportunity to train out of the current program.

See [Appendix A: Details of Gaps](#) for a list of the missing competencies

Transition Scenario

Phased-in with Gap Training and Dual Streaming

Implementation Timelines	
Level 1	April 1, 2019
Level 2	April 1, 2020
Level 3	April 1, 2021
Level 4	April 1, 2022

Year 0 18/19	CL1	CL2	CL3	CL4
Year 1 19/20	HL1	CL2	CL3	CL4
Year 2 20/21	HL1	HL2	CL3	CL4
		Gap A 5 days		
Year 3 21/22	HL1	HL2	HL3	CL4
		Gap A 5 days	CL3	
Year 4 22/23	HL1	HL2	HL3	HL4
		Gap A <i>(If needed)</i>	CL3	CL4
Year 5 23/24	HL1	HL2	HL3	HL4
				CL4
Year 6 24/25	HL1	HL2	HL3	HL4

Training Providers will be required to fill out an ITA Technical Training Result Report to report completion of Gap A Training.

The form can be found at <http://www.itabc.ca/sites/default/files/docs/apply/forms>.

An example of the form can be found in Appendix D: ITA Technical Training Result Report.

Pathways for Apprentices

- **Completed CL1** – complete CL2 (by March 2020), CL3 (by March 2023) and CL4 (by March 2024)
- **Completed CL1 and CL2** – CL3 (by March 2023) and CL4 (by March 2024)
- **Completed CL1, CL2 and CL3** – complete CL4 (by March 2024)
- **Completed HL1** – complete HL2, HL3 and HL4, do not take CL2, CL3 or CL4
- **Completed HL1 and HL2** – complete HL3 and HL4, do not take CL3 or CL4
- **Completed HL1, HL2 and HL3** – complete HL4, do not take CL4

Risks

Apprentices may take the wrong course (i.e. a CL1 student takes HL2, or an HL1 student takes CL2)

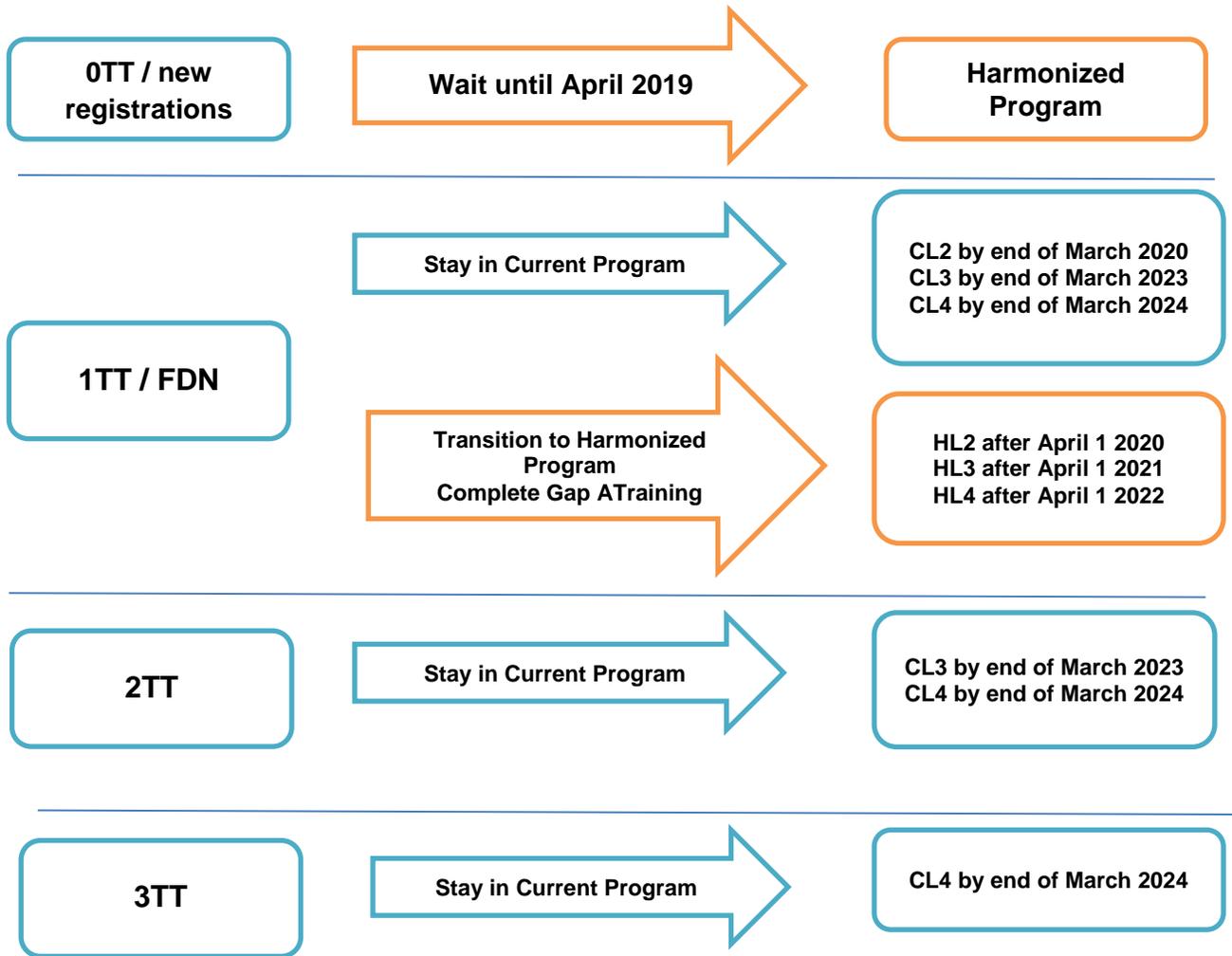
Apprentices who take HL1 must wait until HL2 is implemented before continuing their training. This applies for other HLs as well.

Mitigation Strategies

Ensure that apprentices are registered for the correct course. Check in DA to verify whether apprentice is in the harmonized (HL) or current program (CL).

Communicate with TW and ER that the apprentice cannot take CL2, but must wait for HL2 to be implemented. This applies for other HLs as well.

Pathways for Current Apprentices (Summary)



Total Training Hours

The following changes to training time for Plumber will come into effect **April 1, 2019**:

- Increased technical training hours in order to accommodate content added to the Red Seal Occupational (RSOS) and Gas B competencies **(increase of 30 hours and Level 1 and 3, and an increase of 60 hours at Level 2)**
- Reduction of work-based training (WBT) hours in order to align with the harmonized standard of 7,200 hours of total training **(decrease of 120 hours)**

Apprenticeship Pathway

Current Program	Hours
Technical Training	780
Level 1 = 180 hours	
Level 2 = 180 hours	
Level 3 = 180 hours	
Level 4 = 240 hours	
WBT Hours	6,420
Current Total Training Hours	7,200

Harmonized Program (April 2019)	Hours
Technical Training	900
Level 1 = 210 hours	
Level 2 = 240 hours	
Level 3 = 210 hours	
Level 4 = 240 hours	
WBT Hours	6,300
Harmonized Total Training Hours	7,200

Challenge Pathway and Sign-off Authority

Current Program	Hours
WBT Hours	6,420
ITA Formula for Calculating Challenge WBT	X 1.5
Current Challenge WBT Hours	9,630

Harmonized Program	Hours
Harmonized WBT Hours	6,300
ITA Formula for Calculating Challenge WBT	X 1.5
Harmonized Challenge WBT Hours	9,450

NOTE: If TWs complete the current program, the WBT hours for that program will apply. If they transition, they will complete the WBT hours for the harmonized program.

Exams

Exams for the Harmonized Program

Because the harmonized Plumber program has four levels of technical training there will be a standardized level exam (SLE) for HL1, HL2 and HL3. Apprentices completing HL4 will take the IPSE as their final exam.

Exam	Exam Development	Exam Launch (tentative)
HL1	2018	Fall 2019
HL2	2019	Fall 2020
HL3	2020	Fall 2021

Each harmonized SLE will need to be piloted with the first cohort of apprentices that complete each harmonized level and then further validated by peer review. This means the respective harmonized SLEs will not launch until the at least the tentative launch schedule. For any harmonized classes that finish before the launch of the harmonized SLE, the final mark for the level will be based solely on in-class assessments. **An OPSN will be sent to announce the launch of each harmonized SLE.**

The SLEs current levels will be available for those classes. It will be crucial to ensure that classes are writing the exam that matches the course they have completed. ***When requesting an exam, please indicate whether it is for a harmonized (HL) or current (CL) class.***

Appendix A: Details of Gaps

GAP A: CL1→HL2

Gap (Missing Content)

This table lists the content that a student will be **missing** if they have completed Current Level 1 (CL1) and then take Harmonized Level 2 (HL2).

	Competency	Objectives/LT	Self-Study	F2F	Achievement Criteria
B1	Use Common Tools and Equipment	Use leveling equipment to establish elevations	0	6	Y
F1	Use Communication Techniques	Describe effective communication practices	3	0	N
O1	Use the Principles of Electricity	Describe the fundamentals of electricity Describe electrical circuits Use laws and formulas Describe single phase power characteristics Describe three phase power characteristics Identify transformers	0	24	N
Total Gap Hours			3	30	

Overlap (Repeated Content)

This table lists the content that a student will be **repeating** if they have completed Current Level 1 (CL1) and then take Harmonized Level 2 (HL2).

	Competency	Objectives	Overlap Hours
C3	Use Codes, Regulations and Standards	Describe the application of codes and standards Describe the environmental agencies associated with sewage disposal	20
C4	Use Manufacturer and Supplier Documentation	Describe manufacturer and supplier documentation Source manufacturer documentation	12
Total Overlap Hours			32

GAP B: CL2→HL3

Gap (Missing Content)

This table lists the content that a student will be **missing** if they have completed Current Level 2 (CL2) and then take Harmonized Level 3 (HL3).

	Competency	Objectives/LT	Self-Study	F2F	Achievement Criteria
B8	Use Technical Instruments and Testers	Use temperature measuring instruments Use electrical testing meters Use combustible gas indicator	0	6	N
C1	Use Mathematics and Science	Describe the chemistry of combustion Calculate air requirements and products of combustion Describe draft Describe the building as a system	0	12	N
C3	Use Codes, Regulations and Standards	Describe the B149 Gas Code Interpret sections of the B149 Gas Code	0	20	N
F1	Use Communication Techniques	Describe effective communication practices	3	0	N
H1	Install Sanitary Drainage Systems	Plan the layout of a commercial or institutional DWV system	0	6	Y
H2	Install Storm Drainage Systems	Describe the placement and operation of sumps and catch basins Describe sub-soil drainage systems Describe site retention systems	0	6	N
L1	Interpret Heating and Cooling Systems	Describe the operation of residential forced air systems	0	3	N
O1	Use the Principles of Electricity	Describe the fundamentals of electricity Describe electrical circuits Use laws and formulas Describe single phase power characteristics Describe three phase power characteristics Identify transformers	0	24	N
O5	Apply Wiring Practices	Describe wiring components Describe conductor installation Describe wire termination	0	18	N
P3	Select Gas-Fired Appliances	Describe gas-fired appliances	0	12	N
		Total Gap Hours	3	107	

Overlap (Repeated Content)

This table lists the content that a student will be **repeating** if they have completed Current Level 2 (CL2) and then take Harmonized Level 3 (HL3).

	Competency	Objectives	Overlap Hours
C2	Interpret Drawings and Specifications	Design a DWV system (practical)	3
L2	Install Piping and Components for Hydronic Systems	Size piping and components for hydronic systems	36
N1	Install Piping for Specialized Systems	Describe compressed air systems Describe piping installation for compressed air systems	3
N2	Install Equipment and Components for Specialized Systems	Describe the installation of equipment for compressed air systems	3
N3	Test Specialized Systems	Describe the testing of specialized systems	3
N4	Service Specialized Systems	Describe the maintenance, troubleshooting and repair of specialized systems	3
N5	Commission Specialized Systems	Describe the commissioning of specialized systems	3
		Total Overlap Hours	54

Gap C: CL3→HL4

Gap (Missing Content)

This table lists the content that a student will be **missing** if they have completed Current Level 3 (CL3) and then take Harmonized Level 4 (HL4).

	Competency	Objectives/LT	Self-Study	F2F	Achievement Criteria
B8	Use Technical Instruments and Testers	Use temperature measuring instruments Use electrical testing meters Use combustible gas indicator	0	6	N
C3	Use Codes, Regulations and Standards	Describe the B149 Gas Code Interpret sections of the B149 Gas Code Use gas regulations	0	30	N
F1	Use Communication Techniques	Describe effective communication practices	3	0	N
H1	Install Sanitary Drainage Systems	Plan the layout of a commercial or institutional DWV system	0	6	Y
H2	Install Storm Drainage Systems	Describe the placement and operation of sumps and catch basins Describe sub-soil drainage systems Describe site retention systems	0	6	N
L5	Install Hydronic System Controls	Describe switches Describe, select & install relays Describe the principles of electrical controls Describe control systems for hydronic systems	0	7.5	Y
N1	Install Piping for Specialized Systems	Describe residential irrigation systems	1	0	N
N2	Install Equipment and Components for Specialized Systems	Describe the installation of equipment for irrigation systems	2	0	N
N3	Test Specialized Systems	Describe the testing of specialized systems	1	0	N
N4	Service Specialized Systems	Describe the maintenance, troubleshooting and repair procedures for specialized systems	1	0	N
N5	Commission Specialized Systems	Describe the commissioning of specialized systems	1	0	N
O1	Use the Principles of Electricity	Describe the fundamentals of electricity Describe electrical circuits Use laws and formulas Describe single phase power characteristics Describe three phase power characteristics Identify transformers	24	0	N
O2	Use Electrical Wiring and Diagrams	Identify electrical diagrams Sketch a circuit Analyze simple circuits Describe appliance circuits	0	18	Y

	Competency	Objectives/LT	Self-Study	F2F	Achievement Criteria
		Sketch a ladder diagram			
O5	Apply Wiring Practices	Describe wiring components Describe conductor installation Describe wire termination	0	18	N
P3	Select Gas-Fired Appliances	Describe gas-fired appliances	0	12	N
		Total Gap Hours	33	103.5	

Overlap (Repeated Content)

This table lists the content that a student will be **repeating** if they have completed Current Level 3 (CL3) and then take Harmonized Level 4 (HL4).

	Competency	Objectives	Overlap Hours
C2	Interpret Drawings and Specifications	Describe contractual documents Describe record management	12
E3	Commission Fixtures and Appliances	Describe the commissioning of fixtures and appliances	6
E4	Service Fixtures and Appliances	Describe the servicing of fixtures, trim and appliances	6
I3	Test Water Service and Distribution Systems	Describe the testing of water service and distribution systems	3
I4	Service Water Service and Distribution Systems	Describe the maintenance, troubleshooting and repair of water service and distribution systems	3
I5	Commission Water Service and Distribution Systems	Describe the commissioning of water service and distribution	3
K1	Install Piping for Pressure Systems	Describe pressure systems Size pressure systems Describe the installation of piping for pressure systems Size a pressure system and select a pump (<i>practical assessment</i>)	4
K2	Install Equipment for Pressure Systems	Describe the installation of equipment for pressure systems	4
K3	Test Pressure Systems	Describe the testing of pressure systems	4
K4	Service Pressure Systems	Describe the maintenance, troubleshooting and repair procedures for pressure systems	4
K5	Commission Pressure Systems	Describe the commissioning of pressure systems	2
N1	Install Piping for Specialized Systems	Describe medical gas systems Describe the installation of medical gas piping systems	3

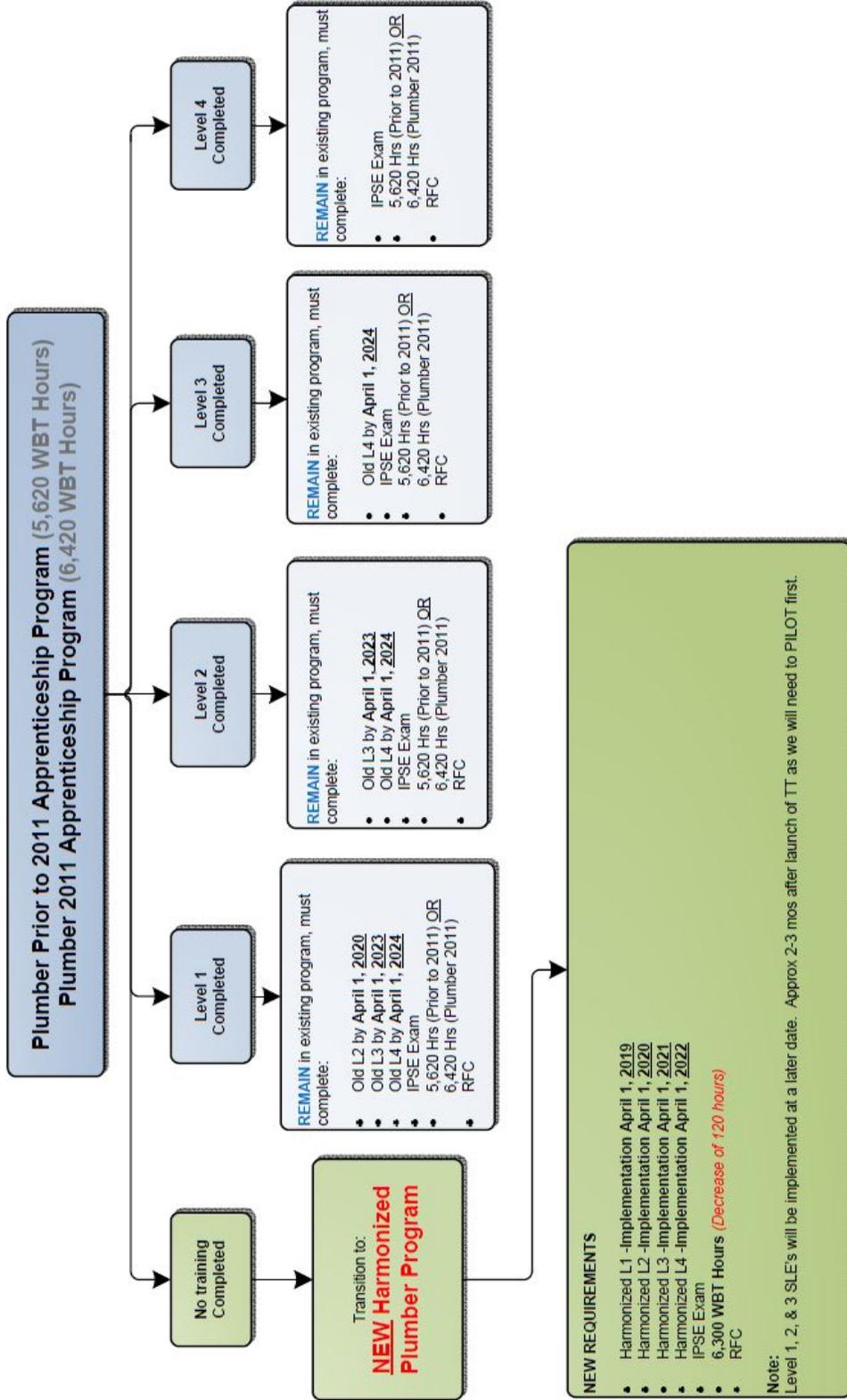
	Competency	Objectives	Overlap Hours
N2	Install Equipment and Components for Specialized Systems	Describe the installation of medical gas equipment	3
N3	Test Specialized Systems	Describe testing for medical gas systems	3
N4	Service Specialized Systems	Describe the maintenance, troubleshooting and repairs for medical gas systems	3
N5	Commission Specialized Systems	Describe the commissioning of medical gas systems	3
P4	Select flame safeguards	Describe flame detectors Describe ignition systems Describe pilot/thermocouple systems	3
		Total Overlap Hours	69

Appendix B: Overall Communication Plan

Audience	Purpose	Mode
Training Providers	To announce the changes to training standards and the publication of a new Program Outline and Program Profile on the trade webpage on the ITA website	Official Program Standards Notification (OPSN) via email and posting on trade webpage
Training Providers	To plan for transitioning to the new program	Webinar(s), phone calls and/or face to face meetings
Training Providers	To announce the final transition plan	Program Update and Transition Plan via email and posting on trade webpage
Training Providers	To announce the launch of the harmonized level exams	OPSN via email and posting on trade webpage
Employers	To gather input on transition scenarios	Webinar(s), phone calls and/or face to face meetings
Employers	To inform on the upcoming changes to the program and the pathways to completion for their apprentices	Letters sent through ITA Direct Access (DA)
Employers	To inform on the upcoming changes to the program and the pathways to completion for their apprentices	Presentations at Program Advisory Committees (PAC) and other industry events
Apprentices	To inform on the upcoming changes to the program and their pathways to completion	Letters sent through ITA Direct Access (DA)
Apprentices	To inform on the upcoming changes to the program and their pathways to completion	Targeted outreach via phone and email
Apprentices	To inform on the upcoming changes to the program and their pathways to completion	Classroom visits by Apprenticeship Advisors

Appendix C: Transition Map

Plumber Transition Map EFFECTIVE April 1, 2019



Last Updated: May 29, 2018

Appendix D: ITA Technical Training Result Report



ITA TECHNICAL TRAINING RESULT REPORT

ITA Customer Service
800 - 8100 Granville Ave
Richmond, BC V6Y 3T6
Tel: 778-328-8700
Toll Free: 1-866-660-6011
examrequest@itabc.ca

Please complete this form and email it to ITA no later than 15 days after class end-date. Missing information may delay the process. The completed form should be emailed to examrequest@itabc.ca

1 GENERAL INFORMATION			
Training Provider Name	Training Provider Location	Instructor Email	
<input type="text"/>	<input type="text"/>	<input type="text"/>	
Training Provider Session ID	Program and Level	Start Date (mm/dd/yyyy)	End date (mm/dd/yyyy)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

*If Applicable, please indicate if student has completed Gap Training.

2 TECHNICAL TRAINING RESULTS					
ITA Individual ID #	Legal Last Name	Legal First Name	Result (%)	*Completed Gap Training	ITA Use Only
1				<input type="checkbox"/>	
2				<input type="checkbox"/>	
3				<input type="checkbox"/>	
4				<input type="checkbox"/>	
5				<input type="checkbox"/>	
6				<input type="checkbox"/>	
7				<input type="checkbox"/>	
8				<input type="checkbox"/>	
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15				<input type="checkbox"/>	
16				<input type="checkbox"/>	
17				<input type="checkbox"/>	
18				<input type="checkbox"/>	
19				<input type="checkbox"/>	
20				<input type="checkbox"/>	

3 SIGNATURE	
Signature of authorized representative of the training provider	Date (mm/dd/yyyy)
<input type="text"/>	<input type="text"/>

Please download the PDF of this form at
<http://www.itabc.ca/sites/default/files/docs/apply/forms>.