

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.

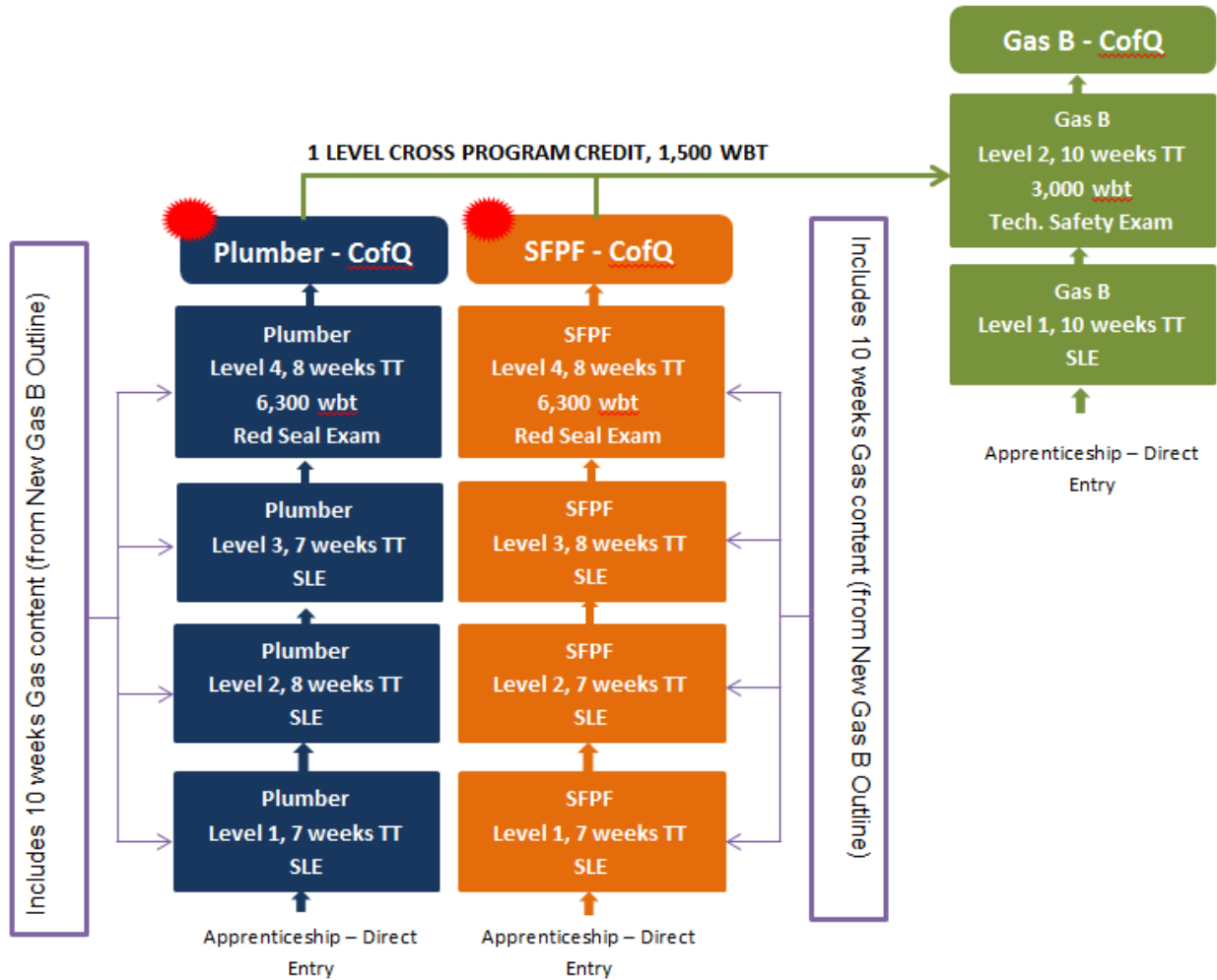
The goal is to substantively align apprenticeship systems across Canada by making apprenticeship training requirements more consistent in the Red Seal trades.

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

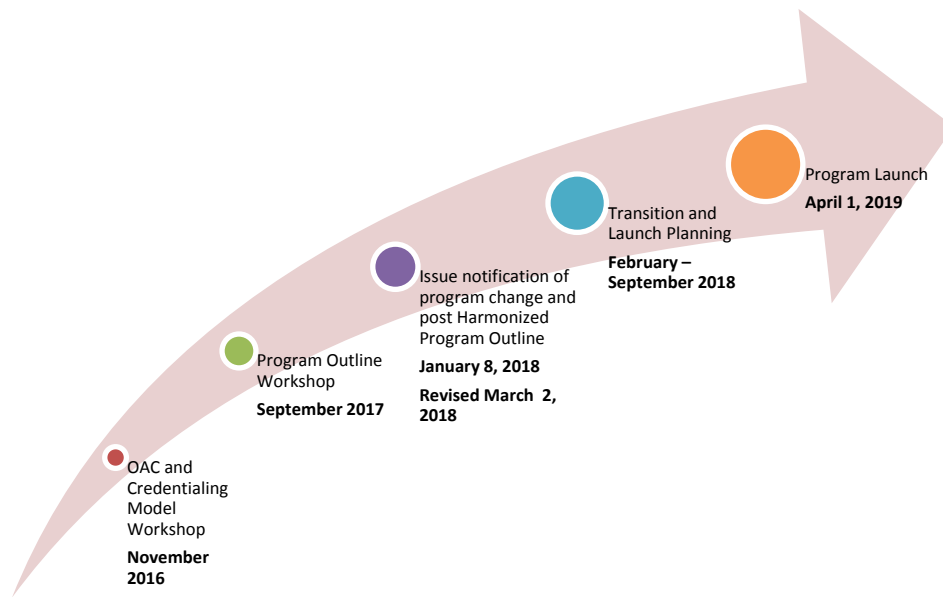


Transition Planning

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

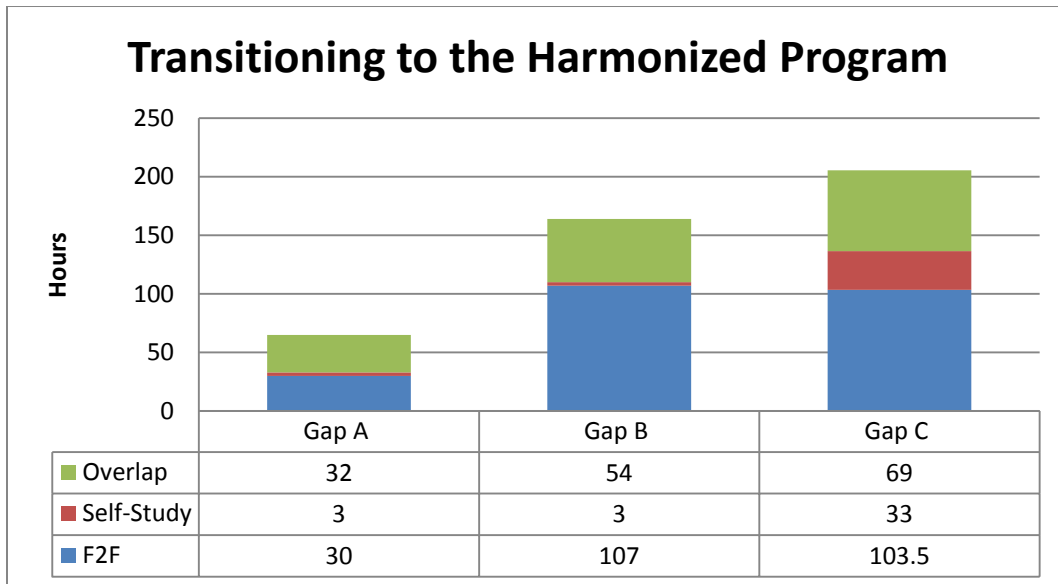


Training Providers (13)

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
Okanagan 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 Gap A 5 days | CL3 | CL4 |
| Year 3 21/22 | HL1 | HL2 Gap A 5 days | HL3 CL3 | CL4 |
| Year 4 22/23 | HL1 | HL2 Gap A <i>(if needed)</i> | HL3 CL3 | HL4 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)

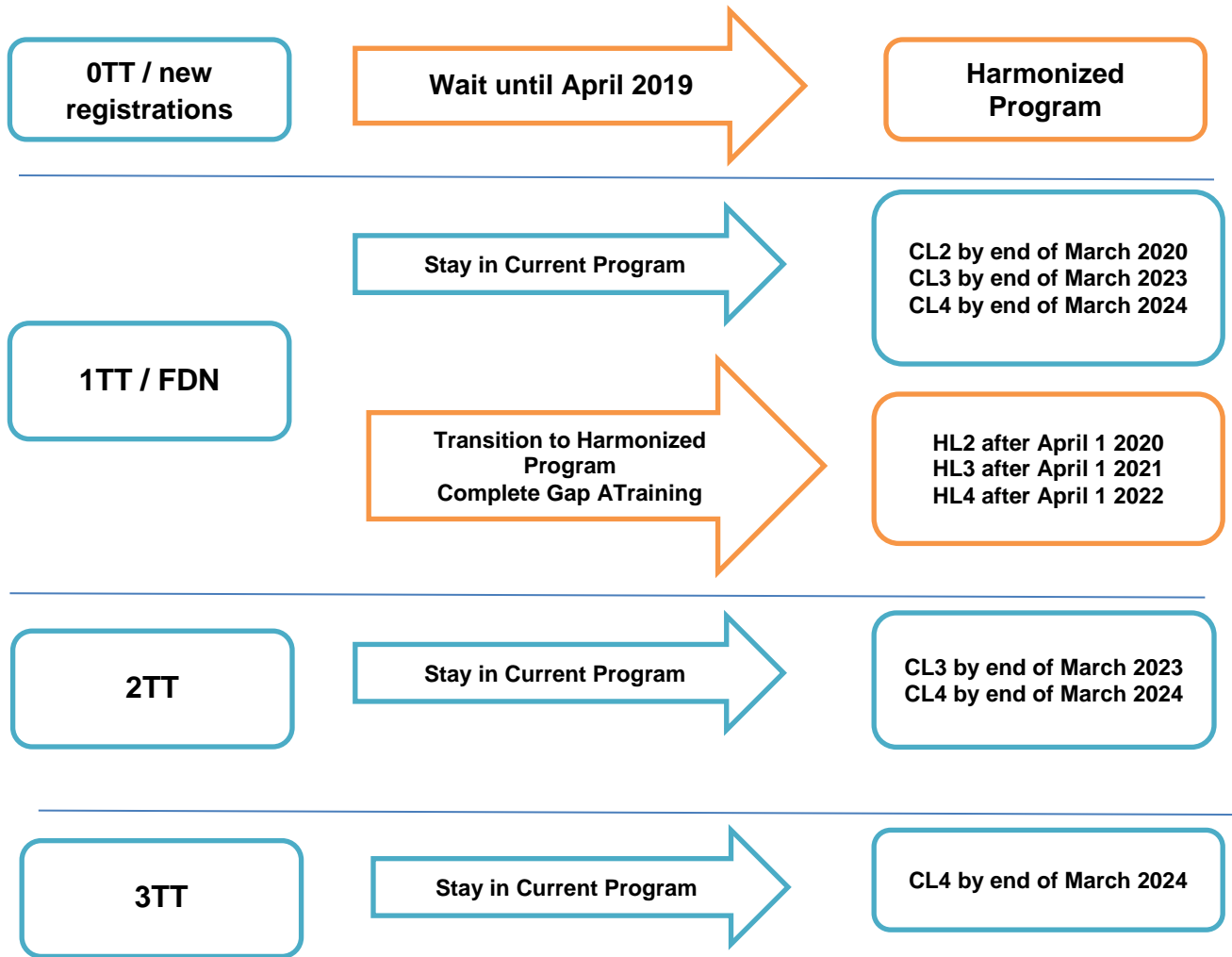
Apprentices who take HL1 must wait until HL2 is implemented before continuing their training. This applies for other HLs as well.

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 |

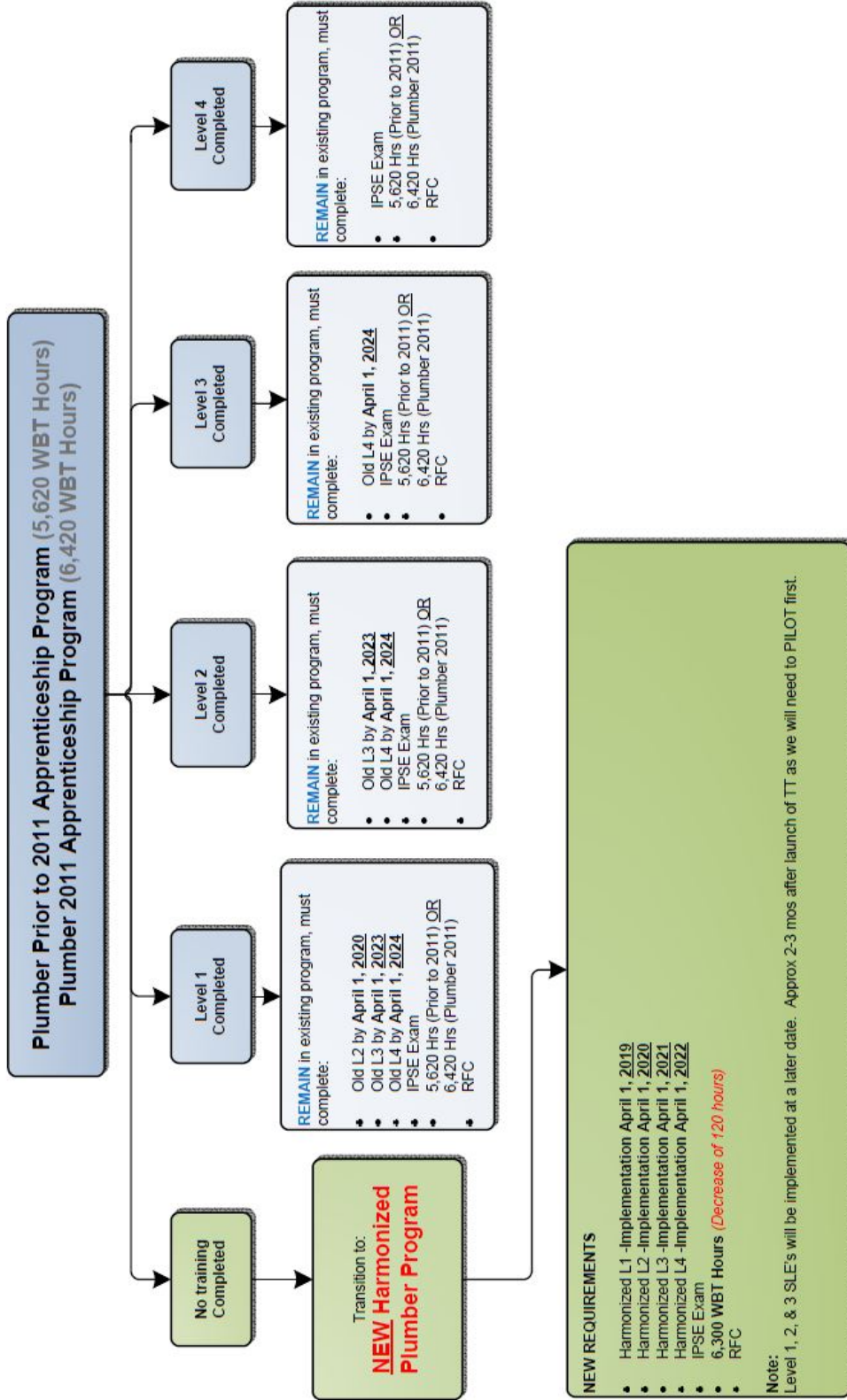
| | Competency | Objectives | Overlap Hours |
|----|--|--|----------------------|
| N2 | Install Equipment and Components for Specialized Systems | Describe the installation of medical gas equipment | 3 |
| N3 | Test Specialized Systems | Describe testing for medical gas systems | 3 |
| N4 | Service 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"/> | |
| 9 | | | | <input type="checkbox"/> | |
| 10 | | | | <input type="checkbox"/> | |
| 11 | | | | <input type="checkbox"/> | |
| 12 | | | | <input type="checkbox"/> | |
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| 14 | | | | <input type="checkbox"/> | |
| 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>.