

Plumber Apprenticeship Level 3 – PLMB3

Trades Training

Program Outline

PROGRAM IMPLEMENTATION DATE:	February 2009
OUTLINE EFFECTIVE DATE:	September 2021
PROGRAM OUTLINE REVIEW DATE:	March 2026

GENERAL PROGRAM DESCRIPTION:

This 7-week program delivers the technical and practical training required for Level 3 of the 4-level Plumber Apprenticeship program. Apprentices will develop the skills, knowledge and training related to installing and maintaining water supply and distribution systems install sewers and sewage treatment systems, install cross connection control devices and assemblies, install hydronic systems, install specialized systems, apply electrical concepts, and plan and install gas-fired appliance system installations. This program includes classroom theory, demonstrations and practical hands-on training in a plumber shop setting. Safe work practices are important in this trade and are emphasized, practiced and reinforced throughout the program.

Credentials Granted: Upon successful completion of the 7-week Level 3 Plumber Apprenticeship program, students receive:

- Level 3 Technical Training credit of the Plumber Apprenticeship program from the Industry Training Authority.

Delivery: This program can be delivered face to face or hybrid (online with face-to-face components).

Time for this program: 7 weeks

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Theory based training (approximately per day)	80%
Practical shop floor training (approximately per day)	20%
Trades Contact Hours	28 hrs/wk

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
Total	

Program Outline Author or Contact:

Mike Vallee, RSE Plumber

Signature

APPROVAL SIGNATURES:

Department Head

Joy Brown

E-mail: jbrown3@cotr.bc.ca

Dean of Trades and Technology

Dr. Jack Moes

E-mail: jmoes@cotr.bc.ca

Department Head Signature

Dean Signature

EDCO

Valid from: September 2021 – March 2026

Education Council Approval Date

PROGRAM PREREQUISITES AND TRANSFER CREDIT:

Prerequisites: Sponsored plumber apprentice who has successfully completed Level 2 technical training of the Plumber Apprenticeship program.

Flexible Assessment (FA):

Credit can be awarded for this program through FA

☐ Yes ☒ No

Prior Learning Credit: Apprentices that have extensive work experience in a trade (in BC or elsewhere) but have never been certified must apply through the Industry Training Authority (ITA) to challenge the certification for advanced placement in a program. Refer to the ITA website (<http://www.itabc.ca/apply-apprenticeship/challenging-exams>) for details regarding the challenge procedure. Trade specific requirements can be found for each trade in the Trades Program Profiles on the ITA website.

Prior Course Number: N/A

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Program Outline Effective Date the following textbooks were in use (most current edition):

- Plumber Level 3:
- COTR Custom Package and 2005 National Plumbing Code
 - Cross Connection Control manual AWWA
 - Cross Connection Control for Plumbing and Pipe Trades
 - Commercial Gas Fitting Level B, Modules A – G
 - Natural Gas & Propane Installation Code B149 1-10

Please see the instructor's syllabus or check COTR's online text calculator

<http://go.cotr.bc.ca/tuition/tCalc.asp> for a complete list of the currently required textbooks.

PROGRAM DESIGN:

Apprenticeship programs cover the general area competencies (GAC) for the program as sourced from curriculum documents provided by Industry Training Authority (ITA). The Technical Training Topics are listed under the Technical Training Content section of this document, and related competencies are listed under the Program Competencies section. College of the Rockies is accredited by ITA to deliver apprenticeship programs.

TECHNICAL TRAINING CONTENT:

PLUMB 301 Perform Routine Trade Activities

- Interpret drawings and specifications
- Use codes, regulations and standards

PLUMB 302 Install Sewers and Sewage Treatment Systems

- Install piping for sewers
- Install manholes and catch basins

PLUMB 303 Install Water Services and Distribution Systems

- Install water services
- Install potable water distribution systems

PLUMB 304 Install Cross Connection Control Devices and Assemblies

- Install and test cross connection control devices and assemblies
- Service cross connection control devices and assemblies

PLUMB 305 Install Hydronic Systems

- Install piping and components for hydronic systems
- Install hydronic system controls

- PLUMB 306 Install Specialized Systems**
- Install piping for specialized systems
 - Install equipment and components for specialized systems
 - Test specialized systems
 - Service specialized systems
 - Commission specialized systems
- PLUMB 307 Apply Electrical Concepts**
- Use electrical wiring diagrams and schematics
 - Apply wiring practices
- PLUMB 308 Plan Gas-Fired Appliance System Installations**
- Size piping and tubing systems
 - Select flame safeguards
 - Select burners
- PLUMB 309 Install Gas-Fired Systems**
- Install piping and tubing systems
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PROGRAM COMPETENCIES:

Upon the successful completion of this program, students will be able to

- interpret drawings and specifications
- use codes, regulations and standards
- install piping for sewers
- install manholes and catch basins
- install water services
- install potable water distribution systems
- install and test cross connection control devices and assemblies
- service cross connection control devices and assemblies
- install piping and components for hydronic systems
- install hydronic system controls
- install piping for specialized systems
- install equipment and components for specialized systems
- test specialized systems
- service specialized systems
- commission specialized systems
- use electrical wiring diagrams and schematics
- apply wiring practices
- size piping and tubing systems
- select flame safeguards
- select burners
- install piping and tubing systems

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

EVALUATION AND ASSESSMENT:

Assignments	% Of Total Grade
Theory	80%
Practical	<u>20%</u>
Total	100%

The minimum passing mark to meet ITA (Industry Training Authority) standards is 70% overall.

PLUMBER APPRENTICESHIP LEVEL 3			
COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
PLUMB 301	Perform Routine Trade Activities	10%	20%
PLUMB 302	Install Sewers and Sewage Treatment Systems	5%	0%
PLUMB 303	Install Water Services and Distribution Systems	15%	15%
PLUMB 304	Install Cross Connection Control Devices and Assemblies	20%	35%
PLUMB 305	Install Hydronic Systems	25%	20%
PLUMB 306	Install Specialized Systems	5%	0%
PLUMB 307	Apply Electrical Concepts	5%	10%
PLUMB 308	Plan Gas-Fired Appliance System Installations	10%	0%
PLUMB 309	Install Gas-Fired Systems	5%	0%
	Total	100%	100%
In-School Theory/Practical Subject Competency Weighting		80%	20%
Final in-school mark Apprentices must achieve a minimum 70% for the final in-school mark to be eligible to write the Plumber Standardized Level exam.		IN-SCHOOL %	

In-school Mark	80%
Standard Level Exam Mark The exam score is multiplied by	20%
Final Level Mark	100%

SAFETY:

WorkSafeBC regulations apply to all trades programs. Students are expected to follow all safe work practices and have high regard for the safety of others as well as of themselves. Students are responsible to wear personal protective equipment (PPE) as directed. At a minimum, students must provide and wear approved safety footwear and eyewear at all times in the shop. Additional PPE may be required for specific tasks. Students are expected to wear clothing suitable for working safely in the shop.

STUDENTS MUST PROVIDE THEIR OWN:

- CSA approved personal protective equipment (PPE)
 - CSA approved Hardhat, blue in colour
 - Steel-toed Work Boots
 - Safety Glasses
 - Coveralls
 - Reference materials
 - Pen, pencils, coloured pencils, etc.
 - Three-ringed binders and paper (lined and unlined)
 - Geometry set
 - Calculator
 - Gloves
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EXAM POLICY:

Students must attend all required scheduled tests and exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled test or exam without approval will be given a grade of “0” for the exam.

PROGRAM GRADE:

Program grades are assigned as follows:

COM	Completed to defined standard $\geq 70\%$
NCG	No Credit Granted $< 70\%$

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating, and plagiarism.

PROGRAM CHANGES:

Information contained in program outlines is correct at the time of publication. Content of the program is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add material to programs.