



Plumber Apprenticeship Level 4 – PLMB4

Trades Training

Program Outline

PROGRAM IMPLEMENTATION DATE:	February 2012
OUTLINE EFFECTIVE DATE:	September 2022
PROGRAM OUTLINE REVIEW DATE:	March 2027

GENERAL PROGRAM DESCRIPTION:

This 8-week program delivers the technical and practical training required for Level 4 of the 4 Level Plumber Apprenticeship Program. Apprentices will develop the skills, knowledge and training related to drainage systems, sewage systems, water services and distribution systems, hydronic systems, specialized systems, gas-fired systems and electrical concepts related to plumbing. The program includes classroom theory, demonstrations and practical hands-on training in a plumber shop setting. Safe work habits are important in this trade and are emphasized, practiced and reinforced throughout the program.

Credentials Granted: Upon successful completion of the 8-week Level 4 Plumber Apprenticeship program, students receive:

- Level 4 Technical Training credit of the Plumber Apprenticeship program from the Industry Training Authority.

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

Time for this program: 8 weeks

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Theory based training (approximately per day)	85%
Practical shop floor training (approximately per day)	15%
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:

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Signature**APPROVAL SIGNATURES:**

Department Head

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Dean of Trades and Technology

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Department Head Signature

Dean Signature

EDCO

Valid from: September 2022 – March 2027

Education Council Approval Date**PROGRAM PRE-REQUISITES AND TRANSFER CREDIT:**

Prerequisites: Sponsored plumber apprentice who has successfully completed Level 3 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 4:
- COTR Custom Package 2012 - 7850000462
 - Domestic/Commercial Gas Fitting Level "B" Modules HKLO
 - IPT Pipe Trade Handbook – Robert A. Lee
 - CSA Standards Code Book for Natural Gas and Propane
 - National Plumbing Code 2010

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 and PROGRAM COMPETENCIES:

PLUMB 401 Perform Routine Trade Activities

- Interpret drawings and specifications

PLUMB 402 Install Plumbing Fixtures and Appliances

- Commission fixtures and appliances
- Service fixtures and appliances

PLUMB 403 Use Communication Techniques

- Use mentoring techniques

PLUMB 404 Install Sewers and Sewage Treatment Systems

- Test manholes, catch basins and piping for sewers
- Service manholes, catch basins and piping for sewers
- Install sewage treatment systems components
- Test sewage treatment systems and components
- Service sewage treatment systems and components

PLUMB 405 Install Drainage, Waste and Vent (DWV) Systems

- Service sanitary and storm drainage systems

- PLUMB 406 Install Water Services and Distribution Systems**
- Test water service and distribution systems
 - Service water service and distribution systems
 - Commission water service and distribution systems
- PLUMB 407 Install Pressure Systems**
- Install piping for pressure systems
 - Install equipment for pressure systems
 - Test pressure systems
 - Service pressure systems
 - Commission pressure systems
- PLUMB 408 Install Hydronic Systems**
- Test hydronic systems, components and controls
 - Service hydronic systems, components and controls
 - Commission hydronic systems, components and controls
- PLUMB 409 Install Water Treatment Equipment**
- Install water treatment equipment
 - Test and commission water treatment equipment
 - Service water treatment equipment
- PLUMB 410 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 411 Apply Electrical Concepts**
- Apply single phase motor systems
 - Apply three phase motor systems
 - Interpret the Canadian Electrical Code (CEC)
- PLUMB 412 Plan Gas-Fired Appliance Systems Installations**
- Select regulators, valves and valve train components
 - Plan a project
- PLUMB 413 Install Gas-Fired Systems**
- Install regulators, valves and trains
 - Install air supply systems
 - Commission fuel/air delivery systems
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EVALUATION AND ASSESSMENT:

Assignments	% Of Total Grade
Theory	85%
Practical	<u>15%</u>
Total	100%

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

PLUMBER APPRENTICESHIP LEVEL 4			
COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
PLUMB 401	Perform Routine Trade Activities	4%	0%
PLUMB 402	Install Plumbing Fixtures and Appliances	4%	0%
PLUMB 403	Use Communication Techniques	4%	0%
PLUMB 404	Install Sewers and Sewage Treatment Systems	10%	0%
PLUMB 405	Install Drainage Waste and Vent (DWV) Systems	4%	0%
PLUMB 406	Install Water Services and Distribution Systems	4%	0%
PLUMB 407	Install Pressure Systems	12%	40%
PLUMB 408	Install Hydronic Systems	5%	0%
PLUMB 409	Install Water Treatment Systems	12%	10%
PLUMB 410	Install Specialized Systems	8%	0%
PLUMB 411	Apply Electrical Concepts	11%	0%
PLUMB 412	Plan Gas-Fired Appliance System Installations	11%	50%
PLUMB 413	Install Gas-Fired Systems	11%	0%
	Total	100%	100%
In-School Theory/Practical Subject Competency Weighting		85%	15%
Final in-school percentage score Apprentices must achieve a minimum 70% as the final in-school percentage score to be eligible to write the Interprovincial Red Seal exam		IN-SCHOOL %	

All apprentices who complete Level 4 of the Plumber program with a FINAL level percentage score of 70% or greater will write the Interprovincial Red Seal examination as their final assessment.

ITA will enter the apprentices' Plumber Interprovincial Red Seal examination percentage score into ITA Direct Access.

A minimum percentage score of 70% on the examination is required for a pass.

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.