ORIGINAL COURSE IMPLEMENTATION DATE: September 2013
REVISED COURSE IMPLEMENTATION DATE: September 2024
COURSE TO BE REVIEWED (six years after UEC approval)**:** January 2030
Course outline form version: 28/10/2022

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: PLMB 111	**Number of Credits:** 4
Course Full Title: Math and Science **Course Short Title:** Math & Science	
Faculty: Faculty of Applied and Technical Studies	**Department (or program if no department):** Plumbing and Piping

Calendar Description:

Introduces students to the scientific theory, calculations, and problem-solving techniques in the piping trades. Emphasis on standard measurement units and conversions.

Prerequisites (or NONE):	PLMB 110.
Corequisites (if applicable, or NONE):	NONE
Pre/corequisites (if applicable, or NONE):	NONE

Antirequisite Courses *(Cannot be taken for additional credit.)*

Former course code/number:

Cross-listed with:

Equivalent course(s):

(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar	65
Tutorials/workshops	35
Total hours	**100**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: ☒ No ☐ Yes

Course Details

Special Topics course: **No**
(If yes, the course will be offered under different letter designations representing different topics.)

Directed Study course: **No**
(See policy 207 for more information.)

Grading System: **Credit/No Credit**

Delivery Mode: **May be offered in multiple delivery modes**

Expected frequency: **Annually**

Maximum enrolment (for information only)**: 18**

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

Transfer Credit *(See **bctransferguide.ca**.)*

Transfer credit already exists: **No**

Submit outline for (re)articulation: **No**
(If yes, fill in transfer credit form.)

Department approval	**Date of meeting:**	November 2023
Faculty Council approval	**Date of meeting:**	December 2023
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	January 26, 2024

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Perform standard measurement unit conversions.
2. Use trigonometry to solve problems in the piping trades.
3. Calculate piping measurements including elevations and grades.
4. Describe factors that affect fluid flow in a piping system including Pascal's theory of pressure and Archimedes' principles.
5. Calculate the expansion and contraction of various piping materials due to heating and cooling.

Recommended Evaluation Methods and Weighting

Final exam:	50%	Assignments:	20%	
Quizzes/tests:	20%	Shop work:	10%	

Details:

70% minimum needed in course after weighted percentages.

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Instructional Methods

Presentations, online instruction, practical measuring.

Texts and Resource Materials

	Type	Author or description	Title and publication/access details	Year
1.	Textbook	Troy White	Canadian Plumbing Design and Installation	2019
2.	Other	ILM	UFV Plumbing Custom Package	2021

Required Additional Supplies and Materials

Scientific calculator (non-programmable)
Steel toe boots
Safety glasses

Course Content and Topics

Problem solving techniques.
Volume and conversion problems
Trigonometry
Piping measurement calculations
Pressure, displacement, and fluid power
Heat transfer and load calculations

Math: 3 weeks
Science: 1 week