

# APPT 162: MATHEMATICS/ SCIENCE FOR THE PLUMBING TRADE

## Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2022
Units:	4.5
Hours:	36 lecture, 66 laboratory per quarter (102 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Plumbing & Pipefitting Apprenticeship Program.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

## Student Learning Outcomes

- A student will be able to demonstrate and apply all the related math and science required in the plumbing and pipefitting industry.
- A student will be able to apply hands on method using industry standard piping products and fittings.

## Description

First year of the Plumbing and Pipefitting Apprenticeship program. This course provides students with a working knowledge of mathematics and science as it applies to the plumbing industry.

## Course Objectives

The student will be able to:

- Demonstrate mathematics required in the plumbing industry
- Demonstrate science required in the plumbing industry

## Course Content

- Mathematics
  - Basic math review
  - Formulas and tables
  - Pipe measurement
- Science
  - Properties of water
  - Hydraulics and pneumatics
  - Mechanics
  - Metals and alloys
  - Corrosion

## Lab Content

Students will work individually on applying math principles and concepts to the layout of piping systems in the lab:

- Math and geometry for pipe measurements I & II
- Formulas for related math in the plumbing trades
- Metric measurements
- Instruments used for piping systems layout

## Special Facilities and/or Equipment

- Laboratory with overhead projector
- Calculator
- When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address

## Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Written examination  
Hands-on demonstration  
Chapter quizzes  
Group and classroom participation  
Punctuality

## Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture  
Discussion  
Laboratory  
Demonstration

## Representative Text(s) and Other Materials

United Association of Journeymen and Apprentices. [Related Mathematics, Science](#). 2019.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- Readings from the textbook, Sections 1-137
  - Math & Science for the Plumbing Trades
  - Application of Geometry for the Plumbing Trades
  - Instrumentation for Piping Systems Layouts
- Writing assignments are related to the assignments given in the laboratory
  - Math calculations for pipe measurements
  - Geometry of piping systems
  - Applying formulas for related math in the pipe trades
  - Calculating metric measurements for piping system layouts
  - Specifying instruments used for piping system layouts

## **Discipline(s)**

Plumbing