APPT 162: MATHEMATICS/ SCIENCE FOR THE PLUMBING TRADE

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2025
Units:	4.5
Hours:	30 lecture, 72 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:

1. Demonstrate mathematics required in the plumbing industry
2. Demonstrate science required in the plumbing industry

Course Content

1. Mathematics
   a. Basic math review
   b. Formulas and tables
   c. Pipe measurement
2. Science
   a. Properties of water
   b. Hydraulics and pneumatics
   c. Mechanics
   d. Metals and alloys

Lab Content

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

1. Math and geometry for pipe measurements I & II
2. Formulas for related math in the plumbing trades
3. Metric measurements
4. Instruments used for piping systems layout

Special Facilities and/or Equipment

1. Laboratory with overhead projector
2. Calculator
3. 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 of the Plumbing and Pipefitting Industry of the United States and Canada. Related Mathematics. 2023.

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

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

Discipline(s)

Plumbing