

# APPT 190: PIPE FITTING WITH A CALCULATOR

## Foothill College Course Outline of Record

Heading	Value
<b>Effective Term:</b>	Summer 2021
<b>Units:</b>	5
<b>Hours:</b>	37 lecture, 86 laboratory per quarter (123 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the plumbing & pipefitting apprenticeship program.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- A student will be able to describe operation of diaphragm direct flush valves.
- A student will be able to demonstrate the use of special tools and equipment for setting fixtures.
- A student will be able to list components of gas water heaters.

## Description

This course provides students with a working knowledge of mathematics and pipe fitting as it applies to the plumbing and pipe fitting industry. Students will apply safety practices as it relates to on-the-job training.

## Course Objectives

The student will be able to:

- Demonstrate the application of mathematics required in the plumbing industry.
- Demonstrate the application of pipe lay out required in the plumbing industry.

## Course Content

- Mathematics
  - Advanced math review
  - Formulas and tables
  - Pipe measurement
- Pipe lay out
  - Mathematics
  - Lay-out angles

## Lab Content

Students will work on applying math principles and concepts of the layout for piping systems.

- Apply math principles and concepts for the layout of piping systems.
- Apply math and geometry for pipe measurement.
- Solve problems using formulas and a calculators.

## Special Facilities and/or Equipment

Laboratory with overhead projector computers and calculators.

## Method(s) of Evaluation

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

## Method(s) of Instruction

Discussion  
Laboratory  
Demonstration

## Representative Text(s) and Other Materials

Winstead, C.R.. *Pipe Fitting with a Calculator*. 1981.

NOTE: This is the standard Plumbing/Pipe Trades textbook and workbook used for this course. Although it may not be within five years of the required published date, it is the most current used when teaching this course. We will adopt the next edition as it is published.

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

- Readings from the textbook. Examples include:
  - How to find the angle of a right triangle (Chapter 1)
  - Calculate sine, cosine and tangent (Chapters 2-5)
- Writing assignments; examples include:
  - Perform math calculation for pipe measurements
  - Perform geometry
  - Applying formulas for pipefitting with a calculator in the Pipe Trades
  - Calculating metric measurements for piping system layouts
  - Specifying instruments used for piping system layouts

## Discipline(s)

Plumbing