

# APPT 198: PLUMBING SERVICE & REPAIR

## 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 the steps for pressure-testing a plumbing system.
- A student will be able to list characteristics of good public and customer relations.

## Description

This course provides students with a working knowledge of service and repair work. Students will learn basic identification and troubleshooting skills needed to complete repairs in a safe and timely manner.

## Course Objectives

The student will be able to:

1. Troubleshoot defective plumbing system
2. Identify proper tools needed to complete repair
3. Safely complete system repair
4. Communicate clearly with customer the extent of repairs needed
5. Complete work order paperwork legibly and correctly

## Course Content

1. Plumbing service and repair tools
  - a. Hand tools
  - b. Fixture tools
  - c. Power tools
  - d. Snakes and drain cleaners
  - e. Miscellaneous
2. Safety
  - a. Material safety sheets
  - b. Job area
  - c. Fire
  - d. Confined space entry
  - e. Trenching and shoring

3. Drain waste and vent
  - a. Drain cleaning
  - b. Video inspection
  - c. Pipe repair
  - d. Water jetting
  - e. Sewage ejector repair and maintenance
4. Water distribution
  - a. Systems
  - b. Supply piping
  - c. Pipe repair
  - d. Flow detection
  - e. Cross contamination
5. Gas systems
  - a. Piping
  - b. Regulator repair
  - c. Gas service valves
  - d. Flame control
  - e. Combustion
6. Plumbing fixtures
  - a. Commercial fixtures
  - b. Residential fixtures
  - c. Bathtubs and showers
  - d. Drinking fountains/water coolers
7. Appliances
  - a. Disposers
  - b. Dishwashers
  - c. Water softeners/filters
  - d. Reverse osmosis
8. Water heaters
  - a. Electric/gas fired
  - b. Hot water supply
  - c. Tankless
  - d. Combination
  - e. Accessories
  - f. Troubleshooting
  - g. Code requirements
9. Boilers and hydronic systems
  - a. Operation
  - b. Hot water boilers
  - c. Terminal devices
  - d. Radiant and convection heating
  - e. Controls
  - f. Troubleshooting

## Lab Content

1. Students will work individually and in teams to troubleshoot faulty plumbing systems.
2. Site safety check to identify any hazards.
3. Rebuild and/or repair faulty systems.

## Special Facilities and/or Equipment

1. Classroom facilities with AV capabilities
2. Plumbing lab with tools and training equipment

3. Personal protective equipment

## Method(s) of Evaluation

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

Written exams  
Hands-on demonstration  
Classroom discussion  
Group exercise

## Method(s) of Instruction

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

Discussion  
Demonstration  
Hands-on learning

## Representative Text(s) and Other Materials

United Association. Plumbing Service, Maintenance, and Repair. 2017.

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

1. Reading
  - a. Material safety sheets
  - b. Equipment specification sheets
  - c. Manufacturers recommendations/repair manuals
  - d. Textbook
  - e. Internet resources
2. Written
  - a. Textbook worksheets
  - b. Written analysis of defective system
  - c. Daily report forms
  - d. Material order forms

## Discipline(s)

Plumbing