APPT 135A: P-301A PLUMBING FIXTURES

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	2.5
Hours:	18 lecture, 36 laboratory per quarter (54 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Plumbing Technology Apprenticeship Program.
Advisory:	Not open to students with credit in APPR 116.
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 successful student will be able to list components of gas water heaters.
- A successful student will be able to describe operation of diaphragm direct flush valves.
- A successful student will be able to demonstrate the use of special tools and equipment for setting fixtures.

Description

Instruction in plumbing fixtures and appliances. Names and design features of various plumbing fixtures are discussed. Study of proper installation, maintenance, and repair of fixtures and appliances.

Course Objectives

The student will be able to:

1. Identify names and design features for various types of plumbing fixtures and appliances
2. Describe the operating principles for installation and maintenance of most faucets, flush valves, common control devices, and water heaters
3. List and explain the general criteria for installation, maintenance, and repair of plumbing fixtures and appliances

Course Content

1. Identify names and design features for various types of plumbing fixtures and appliances
   a. Names and design characteristics of various types of water closets and urinals
   b. Design characteristics of lavatories, faucets, tub and shower valves
   c. Characteristics of service sinks and drinking fountains
   d. Design styles and characteristics water heaters
2. Describe the operating principles for installation and maintenance of most faucets, flush valves, common control devices, and water heaters
   a. Operation and flushing action of various types of water closets and urinals
   b. Closet flush tank
   c. Flushometer valves assemblies
   d. Faucet assemblies
   e. Tub and shower valve assemblies
   f. Gas and electric water heaters
3. List and explain the general criteria for installation, maintenance, and repair of plumbing fixtures and appliances
   a. General safety, sanitary, and Americans with Disabilities Act regulations
   b. Plumbing code requirements
   c. Special tools and equipment for setting fixtures
   d. Select and install anchors, fasteners, backing, and carriers
   e. Installation procedures for plumbing fixtures, faucets, and flush valves
   f. Installation and code requirements for water heaters
   g. Hot water return circulating pumps
   h. Maintenance, troubleshooting, and repairs for fixtures, faucets, and flush valves
   i. Maintenance, troubleshooting, and repairs for water heaters
   j. Drain line service

Lab Content

Students will work individually and in teams on installation and maintenance practices for a variety of plumbing fixtures and appliances.

Special Facilities and/or Equipment

1. Laboratory with plumbing and piping equipment.
2. 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:

Results of written exercises and final examination
Satisfactory completion of hands-on projects
Maintenance of a student's workbook with questions drawn from text

Method(s) of Instruction

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

Lecture
Lab assignment
Group discussion
Demonstration

Representative Text(s) and Other Materials

American Technical Publishers. Plumbing Service, Maintenance, and Repair. 2017.

Although this textbook is older than 5 years, it is the most current book 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

1. Readings from assigned textbook
    a. Manufacturer's specifications
2. Writing assignments given in the laboratory
    a. Quizzes on assembly and repair techniques
    b. List and describe function of components of a flushometer valve

Discipline(s)

Plumbing