APPT 169: HYDRONICS II

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	4.5
Hours:	36 lecture, 63 laboratory per quarter (99 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 Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- A student will be able to apply plumbing and building detailing.
- A student will be able to classify and recognize drawings related to the plumbing industry.
- A student will be able to demonstrate the use of all MEP drawing in the fabrication and layout process.

Description

Fifth-year course of the Plumbing and Pipefitting Apprenticeship program. This course provides students with a working knowledge of advanced drawing, plumbing layout, and building detailing. Practical field knowledge of piping duties, processes, objectives, and code callouts is covered in-depth.

Course Objectives

The student will be able to:

1. Recognize and classify drawings related to the piping industry
2. Apply piping and building detailing
3. Supervise piping job sites and hydronic systems

Course Content

1. Classification of drawings
   a. Advanced plan reading
   b. Applied drafting
   c. Hydronic systems
   d. Drawing coordinator and plumbing design
   e. Specifications
2. Plumbing and building detailing
   a. Review detailed plans to spec
   b. Create a detail legend using the computer-aided design (CAD) system
3. Job sites
   a. Supervise mechanical job sites

Lab Content

Students will work individually and in teams reviewing detailed piping and building drawing in the lab, which includes:

1. Sketches and isometric drawings
2. Using a scale for layout
3. Uniform Plumbing Code review
4. Mechanical fabrication
5. Exam preparation
6. Piping systems
   a. Convection, conduction, radiation
   b. Heat pumps
   c. Pre-cool and chilled water boilers
   d. Controls
   e. Pumps

Special Facilities and/or Equipment

1. Laboratory with drawing tables/over head projector
2. Drawing utensils
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. Advanced Plan Reading and Drawing. 2020.

U.A.. Hydronics Heating and Cooling. 2016.

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

1. Readings from the textbook
   a. The application of advanced plan reading and mechanical systems
   b. Learning 3-D and 4-D applications

2. Writing assignments are related to the assignments given in the laboratory
    a. Math calculations for isometric and 3-D drawings
    b. Plumbing Code practice handouts throughout the course

Discipline(s)

Plumbing