

APPT 138: P-402 ADVANCED DRAWING & BLUEPRINT READING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	7
Hours:	72 lecture, 36 laboratory per quarter (108 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 114.
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 identify standard architectural symbols used on a construction print.
- A student will be able to identify common types of drawings.
- A student will be able to describe the purpose of specifications.

Description

Interpretation of orthographic and isometric drawings and building plans that make up working drawings for the proper installation of piping systems. Covers standard graphic symbols used to represent piping, fittings, and valves on construction drawings, as well as various construction methods and materials, specifications, and submittals. Hands-on exercises in the creation and coordination of shop drawings.

Course Objectives

The student will be able to:

1. Describe basic print reading concepts
2. Identify common types of drawings
3. Describe scale drawings
4. Identify standard graphic symbols used on construction drawings
5. Describe common types of construction methods and materials
6. Describe information contained on various plan pages, details, and specifications
7. Create shop drawings
8. Determine proper pipe sizing for commercial water, gas, waste, and vent installations

Course Content

1. Describe basic print reading concepts
 - a. Conventional drafting processes
 - b. Identify standard line types
2. Identify common types of drawings
 - a. Perspective
 - b. Orthographic
 - c. Isometric
3. Describe scale drawings
 - a. Scale function
 - b. Architect's scale
4. Identify standard graphic symbols used on construction drawings
 - a. Plumbing symbols
 - b. Piping symbols
 - c. Pipe fitting and valve symbols
 - d. Mechanical and electrical symbols
5. Describe common types of construction methods and materials
 - a. Wood frame construction
 - b. Concrete and masonry
 - c. Metal frame construction
6. Describe information contained on various plan pages, details, and specifications
 - a. Identify common types of building plans
 - b. Structural and foundation plans
 - c. Detail drawings
 - d. Finish schedules
 - e. Specifications and submittals
7. Determine proper pipe sizing for commercial water, gas, waste, and vent installations
 - a. UPC Chapter 6, Water Supply and Distribution / Appendix A
 - b. UPC Chapter 12, Fuel Piping
 - c. UPC Chapter 7, Sanitary Waste
 - d. UPC Chapter 11, Storm Drainage
8. Create shop drawings
 - a. Scale drawing
 - b. Plan view
 - c. Coordination drawing
 - d. Draw isometric views
 - e. Draw spool sheets
 - f. Generate material lists

Lab Content

1. Students will work individually and in teams on drawing plumbing piping projects
2. Students will learn to create and coordinate piping drawings

Special Facilities and/or Equipment

1. Laboratory with drawing tools.
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
Group and classroom participation

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

Proctor, Thomas E., and Leonard P. Toenjes. PRINTREADING for Residential and Light Commercial Construction, Part 2, 6th ed.. 2016.

International Association of Plumbing and Mechanical Officials. 2016 California Plumbing Code, Title 24, Part 5. 2016.

International Pipe Trades Joint Training Committee, Inc.. Drawing Interpretation and Plan Reading. 2015.

Although these textbooks are older than 5 years, they conform to national training standards and are considered seminal works in the discipline. We will adopt the next edition of each text, as it is published.

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

1. Readings from assigned textbook PRINTREADING for Residential and Light Commercial Construction, Part 2
 - a. Chapter 7: Plans - Commercial Building
2. Writing assignments given in the laboratory
 - a. Identify information on prints taken from Chapter 7: Plans - Commercial Building
 - b. Describe typical items found on site plans, floor plans, and elevation views

Discipline(s)

Plumbing