

APSM 157A: PLANS & SPECIFICATIONS FOR THE SERVICE TECHNICIAN

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2022
Units:	2.5
Hours:	30 lecture, 10 laboratory per quarter (40 total per quarter)
Prerequisite:	Per California Code of Regulations, this course is limited to students admitted to the Sheet Metal 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 successful student will be able to identify the organization outline of information in the plans and specifications.
- A successful student will be able to reference legends of abbreviations and symbols as used in a particular set of plans.

Description

Students gain an introduction to and experience in reading and interpretation of building plans and specifications, especially as related to mechanical systems and equipment.

Course Objectives

The student will be able to:

1. Explain the organization of construction documents (plans and specifications)
2. Define line types, symbols, and abbreviations typically used on plans and specifications
3. Identify and use plan views, elevation views, coordinates, section views, isometric drawings, and detail drawings
4. Find specific information about a project in the plans and specifications provided, as typically referenced by service technicians
5. Compare typical residential drawings with typical commercial drawings

Course Content

1. Explain the organization of construction documents (plans and specifications)
 - a. Identify site, architectural, structural, mechanical, electrical, control, and specialty drawing sections of the plans
 - b. Identify the list of divisions in the specifications
2. Define line types, symbols, and abbreviations typically used on plans and specifications

3. Identify and use plan views, elevation views, coordinates, section views, isometric drawings, and detail drawings
4. Find specific information about a project in the plans and specifications provided, as typically referenced by service technicians
 - a. Refer to equipment schedules, specifications, and submittals to prepare for "start-up" of new equipment
 - b. Use contract documents to prepare a detailed order list of filters, belts, refrigerant and other maintenance items as assigned
5. Compare typical residential drawings with typical commercial drawings
 - a. Determine ordering information for a thermostat sensor and associated wiring in a given commercial project, versus a given residential project
 - b. Prepare an order for a replacement compressor for an air conditioner on a commercial building using plans, specifications, and submittals
 - c. Prepare an order for a replacement compressor for an air conditioner on a residential project using plans, specifications, and submittals

Lab Content

1. For an assigned lab unit, access nameplate and manufacturer's data to determine if the unit is within given specifications for a building
2. From given specifications, determine the minimum SEER for an air conditioner

Special Facilities and/or Equipment

1. Laboratory with sheet metal service tools
2. Personal protective equipment
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:

Demonstrated mastery of course topics as measured by the results of written quizzes, tests, and lab practical
 Class participation
 Comprehensive written final examination
 Comprehensive final project

Method(s) of Instruction

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

Discussion
 Laboratory instruction
 Demonstration

Representative Text(s) and Other Materials

International Training Institute. Reading Plans and Specs, International Training Institute for the Sheet Metal and Air Conditioning Industry (Student Manual, Student Workbook, Selected Specifications and Submittals, and Selected Plans). 2006.

This is the standard sheet metal textbook/workbook used for this course. Although it may not be within five years of the required published date, it is the most current book used when teaching this course.

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

1. Sample reading assignment: Read Unit 1 in the Student Manual, explaining the function of plans and specifications for a construction project and how they are organized
2. Sample writing assignment: Complete Module 1, Activity 1, using plans to find information

Discipline(s)

Sheet Metal or Air Conditioning, Refrigeration, Heating