

APSM 131: SMQ-31 CAD DETAILING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	1
Hours:	10 lecture, 30 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 (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- A successful student will be able to identify 15 Cad Duct or selected software command icons.
- A successful student will be able to set up the parameters of a CAD drawing.

Description

Course covers basic computer-aided design (CAD) drawing skills required by industry. Use of CAD DUCT or similar specialized third party sheet metal detailing software to set up drawings, including 3-D duct detailing program with emphasis on electronic coordination. This course focuses on file management and drawing protocol and utilization of structural and architectural backgrounds. Students will design ducting within the CAD drawing and use CAD DUCT or similar software for location and elevation, as well as collision checks. Please note that other industry-recognized third party software may be utilized in lieu of CAD DUCT, such as "Benchmark Draft" software, for similar lessons.

Course Objectives

The student will be able to:

- Use third party software, running with AutoCAD, developed for sheet metal-HVAC detailed shop drawings
- Use portions of Architect/Engineer's AutoCAD design drawings to prepare for HVAC/Sheet Metal detailed shop drawings
- Navigate through the CAD DUCT, or other third party software, screen and command menus
- Set parameters for the software
- Demonstrate basic use of the program by creating and plotting a drawing assignment within parameters and template given

Course Content

- Use third party software, running on AutoCAD, developed for sheet metal-HVAC detailed shop drawings
- Use portions of Architect/Engineer's AutoCAD design drawings to prepare for HVAC/Sheet Metal detailed shop drawings

- Import drawing layers needed
- Clean up drawings in preparation for detailing a HVAC system
- Navigate through the CAD DUCT, or other third party software, screen and command menus
- Set parameters for the software
 - Set up the parameters of the CAD drawing, according to shop standards given
 - Practice file management conventions
- Demonstrate basic use of the program by creating and plotting a drawing assignment within parameters and template given
 - Create a drawing file
 - Use CAD DUCT to detail small job
 - Set up systems reports
 - Prepare for plotting and plot/print drawing
 - Save work to the hard disk

Lab Content

In the laboratory, students will work individually and in teams to:

- Design HVAC systems and detailed CAD drawings
- Use third-party CAD software in developing shop drawings
- Review safe working practices and safe use of equipment
- Learn safe ergonomic work practices

Special Facilities and/or Equipment

- Computer laboratory with CAD software

Method(s) of Evaluation

- Results of written quizzes and tests
- Shop participation
- Comprehensive written final examination
- Comprehensive final project
- Evaluation of progress by weekly assignment

Method(s) of Instruction

- Discussion
- Laboratory instruction
- Demonstration

Representative Text(s) and Other Materials

International Training Institute. [International Training Institute, Detailing \(student manual\)](#). 2007.

This is the standard Sheet Metal textbook/workbook used for this course. Although it may not be within 5 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

- Reading assignment:
 - Read the text Chapter: Construction Coordination Software, Unit 1, Third Party Software
- Writing assignment, from textbook:
 - Complete the written Review Sheet, page CS1-5, regarding third-party software

Discipline(s)

Sheet Metal