APSM 106: SMQ-6 BEGINNING DUCT FITTINGS

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	1.5
Hours:	12 lecture, 28 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 layout and fabricate basic rectangular duct transitions to industry standards.
- A successful student will be able to layout and fabricate common rectangular elbows, square elbows, radius elbows and change elbows.

Description

Focus is on the variety of duct connections, sealing, elbows and transitions common to the sheet metal industry.

Course Objectives

The student will be able to:
A. Identify and make common duct connections including rectangular ducts and round ducts
B. Lay out and fabricate common rectangular elbows; square, radius, and change elbows
C. Lay out and fabricate basic transitions to usable industry standards including centered and simple offset transitions
D. Calculate shear lists and provide pattern fabrication data

Course Content

A. Common duct connections
1. Rectangular duct connections
2. Round duct connections
3. Duct leakage and joint sealing
4. Duct construction standards
5. Duct fabrication sequence
B. Common rectangular elbows; square, radius, change elbows
1. 90 degree rectangular duct elbows
2. Radius rectangular elbow
3. Transitional cheek elbow
4. Rectangular elbow at an angle
C. Basic transitions to usable industry standards
1. Centered transition
2. Simple offset transition
D. Calculate shear lists and provide pattern fabrication data
1. Shear list definition and practice exercises
2. Provide data needed for computerized pattern fabrication using input sheets
3. Review and testing (prepare cut sheets, fabricate and connect fittings)

Lab Content

Lab content includes use of sheet metal hand tools and equipment to practice duct construction and fabrication of several basic duct fittings.

Special Facilities and/or Equipment

A. Laboratory with sheet metal tools
B. Personal protective equipment

Method(s) of Evaluation

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

Results of quizzes, tests and final exam
Class participation
Adequately perform to minimum industry standards on class projects related to duct fitting
Workbook of daily student work activities
Shop safety and work habits

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. Core Sheet Metal Curriculum, International Training Institute for the Sheet Metal and Air Conditioning Industry (student manual and workbook). 2010.

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

A. Reading assignment, from textbook:
1. Read pages 217 to 223 in Unit 3 "Fabrication" regarding shop procedures.
B. Writing assignment, from textbook:
1. Complete a shop ticket and cut list per page 199 Fabrication Worksheet.

Discipline(s)

Sheet Metal