

APSM 134: SMQ-34 ADVANCED LAYOUT FABRICATION

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 layout and fabricate a two way offset square to round.
- A successful student will be able to use a calculator to find specific angle and true length.

Description

Course addresses advanced methods of pattern development using both calculator and manual methods. Students will utilize math formulas relating to sheet metal lay out, fabrication, and shop procedures with the ITI Sheet Metal Pro Calculator, as well as apply geometric construction techniques to advanced patterns and job-site layouts.

Course Objectives

The student will be able to:

- Review sheet metal pattern development methods
- Apply lay out and fabrication methods to various jobs
- Apply math equations to lay out various fittings
- Lay out and fabricate various specialized fittings requiring advanced lay out

Course Content

- Review sheet metal pattern development methods
 - Practice geometric construction techniques for lay out
 - Review application of parallel, radial line, and triangulation lay out methods
- Apply lay out and fabrication methods to various jobs
- Apply math equations to lay out various fittings
 - Use ITI calculator to find specific angle and true lengths
- Lay out and fabricate various specialized fittings requiring advanced lay out
 - Lay out and fabricate a two-way offset square to round

- Lay out and fabricate drop cheek elbow

Lab Content

Working individually and in teams on fabrication of sheet metal products using sheet metal equipment, students will:

- Practice sheet metal pattern development methods
- Apply new layout and fabrication techniques to pattern development methodology
- Practice existing techniques on specialized and unique fittings

Special Facilities and/or Equipment

- Laboratory with sheet metal tools
- Personal protective equipment

Method(s) of Evaluation

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

- 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

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. [Layout Curriculum for the Sheet Metal Industry](#). [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

- Reading assignments:
 - Weekly reading assignments from text and outside sources (supplied by instructor)
- Homework assignment:
 - Complete math worksheets

Discipline(s)

Sheet Metal