

# APSM 130: SMQ-30 ADVANCED WELDING

## Foothill College Course Outline of Record

Heading	Value
<b>Effective Term:</b>	Summer 2021
<b>Units:</b>	1.5
<b>Hours:</b>	14 lecture, 26 laboratory per quarter (40 total per quarter)
<b>Prerequisite:</b>	Per California Code of Regulations, this course is limited to students admitted to the Sheet Metal Apprenticeship Program.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- A successful student will be able to demonstrate proficiency in all welding positions using the GMAW process.
- A successful student will be able to list weld certification procedures.

## Description

Advanced techniques used in oxy-fuel/plasma cutting, GMAW, and GTAW on various types and thicknesses of base material.

## Course Objectives

The student will be able to:

- Demonstrate advanced techniques in GMAW welding, and basic techniques for oxy-fuel and plasma cutting, GTAW, SMAW, and FCAW welding.
- Demonstrate welding techniques in various weld positions.
- Prepare for welding certification.

## Course Content

A. Demonstrate advanced techniques in GMAW welding, and basic techniques for oxy-fuel and plasma cutting, GTAW, SMAW, and FCAW welding

- Safety for all welding and cutting processes
- Skills review in processes noted
- Demonstrate welding techniques in various weld positions
  - Identification and demonstration in vertical and overhead position welding
  - Practice in position welding
- Prepare for welding certification
  - Certification process
  - Weld symbols
  - Code interpretation and requirements

## Lab Content

Students will work on lab assignments including welding projects, as assigned by the instructor. Safety precautions are covered in detail.

## Special Facilities and/or Equipment

Welding laboratory equipped with welding supplies, and sheet metal shop access.

## 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 for the Sheet Metal and Air Conditioning Industry. [Welding 1-4 Student Manual](#). 2005.

Miller Electric Co.. [Guidelines for Shielded Metal Arc \(Stick\) Welding \(SMAW\)](#). 2007.

Miller Electric Co.. [Guidelines for Gas Metal Arc Welding \(GMAW\)](#). 2007.

These are the standard Sheet Metal textbooks/workbooks used for this course. Although one or more may not be within 5 years of the required published date, they are the most current books used when teaching this course.

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

- Reading assignment, from textbook:
  - Read Module 3, Lesson 3, Set Up for Plasma Arc Cutting Operations.
- Writing assignment, from textbook:
  - Complete Module 3, Lesson 3 Review Quiz regarding plasma arc cutting.

## Discipline(s)

Sheet Metal