

APSM 130: SMQ-30 ADVANCED WELDING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	1.5
Hours:	14 lecture, 26 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 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

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 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