

# APSM 113: SMQ-13 WELDING 1: PROCESS & SAFETY OVERVIEW

## Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	1.5
Hours:	16 lecture, 24 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 five PPE, (personal protective equipment) and items associated with working in a welding environment.
- A successful student will be able to demonstrate the proper procedure for setting up GMAW equipment.

## Description

This course begins with an overview of common welding safety hazards and personal protective equipment for welding. The Gas Metal Arc Welding process is introduced and practiced by students as commonly used in the sheet metal industry. Machine set-up and basic skills are stressed.

## Course Objectives

The student will be able to:

- Identify and minimize potential hazards in a welding environment
- Identify five PPE (personal protective equipment) items associated with working in a welding environment
- Demonstrate the proper procedure for setting up GMAW and FCAW equipment
- Produce weld samples with the GMAW process in various positions to acceptable criteria
- Utilize welding terms, definitions and symbols

## Course Content

- Identify and minimize potential hazards in a welding environment
- Identify five PPE (personal protective equipment) items associated with working in a welding environment
- Demonstrate the proper procedure for setting up GMAW and FCAW equipment
  - Identify compatible filler materials and shielding gasses used with various materials

- Properly connect equipment components
- Check for safety concerns
- Produce weld samples with the GMAW and FCAW processes in various positions to acceptable criteria
- Utilize welding terms, definitions and symbols

## Lab Content

- Demonstration and practice using GMAW and FCAW welding equipment properly and reinforcement of weld shop safety practices.
- Use of personal protective equipment and practice of set up and operation of Gas Metal Arc Welding and FCAW equipment in various positions.

## 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 assignments

## 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. [Welding 1-4, International Training Institute for the Sheet Metal and Air Conditioning Industry \(student manual\)](#). 2005.

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 assigned text pages on GMAW shielding gasses and electrodes, describing these and their applications on various metals
- Writing assignment:
  - Prepare written answers by essay and selection in a review to demonstrate and develop knowledge of GMAW welding gasses and electrodes

## **Discipline(s)**

Sheet Metal