

# WELDING TECHNOLOGY (WELD)

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**Must be 16 years of age or older by the first day of class or instructor permission.**

## **WELD S120 Basic Welding**

3 credits (1+4)

A beginning level course covering the fundamentals of oxyacetylene welding, brazing and cutting, and electric arc welding. Emphasis in flat and horizontal welding positions on mild steel using a variety of welding rods and techniques.

## **WELD S152 Intermediate Welding**

3 credits (1+4)

This intermediate level welding techniques course focuses on shielded metal arc welding - SMAW, plasma arc cutting, oxygen-acetylene cutting, and metal grinding. Students will develop intermediate welding skills including gas metal arc welding using flux core and dual shield wire fillers. A special emphasis will be placed on proper fit-up and alignment for fillet and V-groove welds in the flat, vertical, and overhead positions.

**Prerequisite:** WELD S120 (C 2.0 or higher) or instructor permission.

## **WELD S160 Welding Orientation Lab**

3 credits (2+2)

Orients students to general welding. Includes developing safe practices, learning about the work environment, and procedures applicable to the cutting and welding of metals.

## **WELD S162 Shielded Metal Arc Welding Basics**

3 credits (.5+5)

Introduces students to shielded metal arc welding (SMAW) operation and safety. Develops welding skills in making stringer, weave, overlapping beads, fillet welds. **Prerequisite:** WELD S161 or instructor permission.

## **WELD S163 Shielded Metal Arc Welding: Groove Welds**

3 credits (0+6)

Continues shielded metal arc welding (SMAW) operations, developing skills in groove welds with backing. Also introduces the concepts of fit-up and alignment.

**Prerequisite:** WELD S162 or instructor permission.

## **WELD S164 Shielded Metal Arc Welding: Open V-Groove**

3 credits (0+6)

Continues shielded metal arc welding (SMAW) operations, developing skills in open V-groove welds.

**Prerequisite:** WELD S163 or instructor permission.

## **WELD S165 Shielded Metal Arc Welding: Open Root Pipe**

3 credits (.5+5)

Continues shielded metal arc welding (SMAW) operations, developing skills in open root pipe welds. Completion of this course qualifies the student to seek American Welding Society (AWS) Level I certification.

**Prerequisite:** WELD S164 or instructor permission.

## **WELD S175 Selected Topics in Advanced Welding**

3 credits (1+4)

Designed for advanced welders to further their skills in one or more processes and levels. Topics may include aluminum welding, sheet welding, shield metal arc welding, pipe welding, flux-core arc welding, or other to be announced. May be repeated for credit when content varies.

**Prerequisite:** WELD S152 (C 2.0 or higher) or concurrent enrollment or instructor permission.

## **WELD S260 Introduction to Advanced Welding Techniques**

3 credits (2+2)

Introduces students to the different types of welding symbols, identifies and explains detailed drawings, and explains how to use notes on drawings and bills of materials. Also covers air and plasma arc cutting, and introduces students to gas metal arc and flux cored arc weld

**Prerequisite:** AWS Level I certification or instructor permission.

## **WELD S261 Gas Metal Arc Welding**

3 credits (0+6)

Introduces students to setting up gas metal arc welding (GMAW) equipment and building a pad of stringer beads using filler metals and shielding gas. Explains procedures to perform GMAW multi-pass fillet welds on plate in various positions.

**Prerequisite:** WELD S260 or instructor permission.

## **WELD S262 Flux Cored Arc Welding**

3 credits (0+6)

introduces students to setting up flux cored arc welding (FCAW) equipment and building a pad of stringer beads and weave beads using filler metals and shielding gas. Explains procedures to perform FCAW multi-pass fillet welds on plate in various positions.

**Prerequisite:** WELD S261 or instructor permission.

## **WELD S263 Gas Tungsten Arc Welding**

3 credits (.5+5)

Introduces students to equipment set up and safety for gas tungsten arc welding (GTAW). Explains procedures to perform multiple positions and types of welds using GTAW. Completion of this course qualifies the student to seek AWS Level II certification.

**Prerequisite:** WELD S262 or instructor permission.

## **WELD S264 Gas Tungsten Arc Welding: Aluminum**

3 credits (.5+5)

Introduces students to aluminum metallurgy, set up and safety for gas tungsten arc welding (GTAW). Explains techniques to perform multiple positions and types of welds using GTAW on aluminum plate.

**Prerequisite:** WELD S263 or instructor permission.

## **WELD S265 Shielded Metal Arc Welding: Stainless Steel**

3 credits (.5+5)

Introduces students to stainless metallurgy and the selection of proper electrodes. Describes how to set up equipment for making stainless steel groove welds. Provides procedures for making flat, horizontal, vertical, and overhead stainless steel groove welds.

**Prerequisite:** WELD S263 or instructor permission.

## **WELD S297 IS:**