

# WELD 130 : Beginning Welding and Metal Fabrication III

**Credits** 15

**Quarter Offered** Spring

Continuation of [WELD 110](#) and [WELD 120](#). Includes preparation for American Welding Society (AWS SMAW) certification. Learn metallurgy and how to layout, cut, prepare, fit-up, and weld together metal to repair parts and fabricate projects. This class may include students from multiple sections.

This class has a \$200 welding lab supplies course fee.

**Prerequisites**

[WELD 110](#) and [WELD 120](#)

**Course Outcomes**

Upon completion of studying Metallurgy, the student will fully understand how Metals and Alloys are used in the greatest variety of applications of all engineering materials.

It is important to understand how metals (ferrous and non-ferrous) can be made stronger, how they can be shaped by casting, forging, forming, machining processes, and how also welding can alter properties of metals and alloys.

Details:

- a. History in development of Metals both ferrous and nonferrous
- b. Solidification of metals, alloys and phases
- c. Production and forming of metals
- d. Mechanical properties and their measurement
- e. Strengthening mechanisms
- f. Heat Treatment of Steel
- g. Materials characterization and selection
- h. Failure Analysis