

WELD 120 : Beginning Welding and Metal Fabrication II

Credits 15

Quarter Offered Winter

Continuation of [WELD 110](#). Includes the shielded metal arc welding (SMAW) process, electrodes, oxy-acetylene flame cutting, introduction to plasma and carbon arc cutting, gouging, and the fundamentals of metallurgy. Learn to layout, cut, prepare, fit-up, and weld together metal to repair parts and fabricate projects using SMAW. This class may include students from multiple sections.

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

Prerequisites

[WELD 110](#) or instructor permission

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