

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: WEL 123 **Credits:** 3

Course Title: Shielded Metal Arc Welding (Basic)

Course Description:

Teaches operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures. Lecture 2 hours. Lab 3 hours. Total 5 hours per week.

General Course Purpose:

This course is designed for the student that has completed WEL120 and wishes to improve their skills with the SMAW process.

Course Prerequisites and Co-requisites:

Prerequisites: WEL120, SAF130, and WEL150

Student Learning Outcomes:

Upon completion of the course, the student will be able to:

- Define proper polarities
- Define heat requirements
- Demonstrate proper welding techniques in the laboratory
- Identify electrode selection for joining various metal alloys.
- Deposit butt and fillet welds in all positions and assess weld quality
- Perform these objectives in a safe and effective manner

Major Topics to Be Included:

- Welding electrodes, including proper demonstration and practice in all positions:
 - E-6010
 - E-6013
 - E-7018

Effective Date/Updated: October 11, 2023