

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

**Course Prefix and Number:** WEL 153

**Credits:** 3

**Course Title:** Layout and Fitting for Welders

**Course Description:** Covers the application of formulas and calculations to the proper layout and fitting of metals in welding projects. Emphasizes the use of jigs, fixtures, and hand tools in metal fabrication and assembly along with fabrication and safety procedures for hands-on and workplace projects. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**General Course Purpose:** Proper pre-planning and layout skills are required for welders. This course provides students with the knowledge and practical experience to fabricate and assemble quality parts required to gain employment in the metal fabrication field.

**Student Learning Outcomes:**

Upon completing the course, the student will be able to

- a. Use formulas and calculations in the layout of materials;
- b. Design patterns, templates, and fabrication jigs;
- c. Demonstrate proper use of calipers, tape measures and scales to accurately measure materials;
- d. Properly use metal saws, drills, squares, levels, and hand tools; and
- e. Recognize and use standard safety procedures.

**Major Topics to Be Included:**

- a. Introduction to fabrication
- b. Fabrication tools
- c. Reading measurements
- d. Designing patterns and jigs
- e. Layout and fitting methods
- f. Controlling distortion and stresses in fabricated weldments

**Date Created/Updated (Month, Day, and Year):** January 12, 2019