

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

**Course Prefix and Number:** WEL 164

**Credits:** 3

**Course Title:** Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG)

**Course Description:** Introduces practical operations in the use of tungsten arc welding and equipment. Studies equipment operation setup, safety, and practice of Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG). Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**General Course Purpose:** To assist students in developing job skills needed to enter the work force in the welding occupation and as a means to help students acquire the skills necessary to find employment as a TIG welder.

**Student Learning Outcomes:**

Upon completing the course, the student will be able to

- a. Recognize and use proper safety procedures while welding;
- b. Demonstrate the ability to perform correct equipment setup;
- c. Demonstrate the ability to use TIG welding equipment; and
- d. Demonstrate the ability to complete TIG welds successfully.

**Major Topics to Be Included:**

- a. Safety
- b. GTAW process
- c. Equipment set up
- d. Selection of filler materials and gasses
- e. Selection of TIG electrodes and consumables
- f. Weld preparation
- g. TIG welds in the various positions
- h. Techniques for welding aluminum, carbon steel, and stainless steel

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