

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

**Course Prefix and Number:** WEL 166      **Credits:** 3

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

**Course Description:**

Continues 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).

The course outline below was submitted by a college during the course approval process.

**General Course Purpose:**

This course provides intermediate to advanced instruction in TIG (GTAW) welding processes, building upon skills taught in WEL 164- Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG).

**Course Prerequisites and Co-requisites:**

Prerequisite: WEL 164

**Student Learning Outcomes:**

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

- Complete 2G Welder Qualification Tests on Carbon Steel Plate without backing using GTAW
- Complete 3G Welder Qualification Tests on Carbon Steel Plate without backing using GTAW
- Complete 4G Welder Qualification Tests on Carbon Steel Plate without backing using GTAW
- Weld Pipe in 2F, 3F & 4F positions using GTAW process, steel base metal
- Weld Pipe in 2F, 3F & 4F positions using GTAW process, aluminum base metal
- Weld Pipe without backing in 1G positions using GTAW, steel base metal
- Weld Pipe without backing in 2G positions using GTAW, steel base metal

**Major Topics to Be Included:**

- GTAW equipment
- GTAW filler metals
- GTAW gases
- Techniques required for course objectives

**Effective Date/Updated:** September 28, 2023