

Virginia Western Community College

WEL 135

Inert Gas Welding (TIG)

Prerequisites

WEL 120 or division approval.

Course Description

Introduces practical operations in use of inert gas shielded arc welding. Studies equipment operation, setup, safety and practice of GMAW (MIG) and GTAW (TIG).

Semester Credits: 2 Lecture Hours: 1 Lab/Clinical/Internship Hours: 3

Required Materials

Textbook:

Modern Welding. Althouse

Edition: 12

ISBN: 9781635636864

Other Materials

The student supplies the following PPE for student use in the welding labs:

- Safety Glasses MUST BE WORN AT ALL TIMES IN LAB
- Helmet
- Proper Shade Lens
- Welding Hood / Jacket
- Gloves

Students are responsible for replacing any lost or removed equipment.

Course Outcomes

- At the completion of this course, the student should be able to:
- Understand shop and welding Safety
- Understand Shield gasses and Electrodes and their applications
- Set up material to be welded
- Demonstrate the ability to weld Butt, Lap, T, Corner, and Edge joints
- Build a 3" square box according to prints
- Weld a T joint (Test for Employment)

- Students will take an AWS certification test as the “final exam” in the GTAW process on 3/8” plate in either the 1G or 3G position. Students may elect consideration for certification by American Welding Society by paying a non-refundable fee of \$50 prior to testing. The certification fee is also non-transferable to other WEL courses. Students whose test coupons pass the AWS standard will receive certification from AWS.

Topical Description

Week 1 Introduction to GMAW and GTAW
Week 2 Read Chapter 7, Lessons 7A, 7B
Week 3 Understand Shield Gasses and Electrodes
Week 4 Test on Chapter 7
Week 5 Read Chapter 8, Lessons 8A, 8B
Week 6 GTAW Welding Technique
Week 7 Proper set up for material to be welded
Week 8 Test on Chapter 8
Week 9 GTAW electrodes discussed
Week 10 GTAW Weld material discussed
Week 11 Lab, Weld butt joint flat position
Week 12 Lab, Weld lap joint flat position
Week 13 Lab, Weld T joint flat position (Test for Employment)
Week 14 Lab, Build 3" square box according to print
Week 15 Lab, Build 3" square box according to print
Week 16 Final Exam- All projects are due

Notes to Instructors

- None