

**Western Iowa Tech Community College
Course Outline of Record**

Date: 09/24/2014

Prefix & No.: WEL 423 Course Title: Intro to GMAW

Semester **Credit** Hours: 2.00

Lecture **Contact** Hours per Semester: 8.00

Lab **Contact** Hours per Semester: 48.00

Clinical **Contact** Hours per Semester: 0.00

OJT or Internship **Contact** Hours per Semester:

Course/Lab Fee: Yes No

Pre and Post Assessments:

Course Description

This course combines lecture and lab activities to present the Gas Metal Arc Welding (MIG) process used extensively by industry. It emphasizes hands-on applications, metal transfer concepts, GMAW equipment, and safety.

Prerequisite: None

Corequisite: None

Course Needs Statement

This course was developed through the DACUM process to meet local industry needs and national accreditation requirements for WITCC welding students.

Required Textbooks and/or materials

Yes No Other

Course Objectives:

The course will provide information which should enable the student to:

1. Safely operate MIG welding equipment
2. Identify and use various types of metal transfer
3. Select proper shielding gases
4. Produce sound welds using a MIG welder
5. Be able to weld ferrous metals

Content Outline

- I. Safety in MIG Welding
 - A. Eye protection
 - B. Clothing
 - C. Electrical shock
 - D. Hazardous fumes
- II. Metal Transfer
 - A. Short arc
 - B. Globular transfer
 - C. Spray transfer
 - D. Pulsed arc
- III. Shielding Gases
 - A. Argon
 - B. CO₂
 - C. Helium
 - D. Mixtures

Assessment

Course Competencies

At the conclusion of the course, the student will be able to:

1. Observe all safety procedures of MIG welding
2. Set up a MIG welding station
3. Identify various types of MIG welding
4. Determine the type of metal transfer to be used
5. Describe the type of metal transfer to be used
6. Adjust machine for short arc welding
7. Adjust machine for spray arc welding
8. Produce GMAW welds that meet AWS D1.1 inspection standards

Addendum

Prefix & No.: WEL 423 **Course Title:** Intro to GMAW

Key words:

Required Textbooks and/or Materials

Title: Welding Principles and Applications

Author: Jeffus & Johnson

Edition: Current

Publisher: Delmar

ISBN-13:

ISBN-10:

Other Materials: Safety glasses, gloves, pliers, and leathers

Course/Lab Fee: \$0.00

Rationale (usage) for lab fees:

Additional Information:

Competencies According AWS Standards

- I. ____ Tee Joint 3/16" Fillet Horizontal (2F)
- II. ____ Lap Joint 3/16" Plate Horizontal (2F)
- III. ____ Tee Joint 3/16" Fillet Vertical Down(3F)
- IV. ____ Lap Joint 3/16" Plate Vertical Down (3F)
- V. ____ 3/16" Fillet Horizontal Spray Mode (2F)

Common Final: Yes No

See Division Chair for facility and equipment needs.

Reminder: Each Course Outline of Record is expected to be reviewed every five (5) years.

Attached Files:

[Competencies According to AWS Standards](#)