

IMAC – Welding Level I

(College ID: WLD 152 - Basic Welding B)

Description:

This 120-hour training course offers an introduction to common cutting and welding processes used in industry. Theory, setup, operation, and related safety are applied. Approximately one-third of the time is spent on lecture and theory while the remaining time is spent on “hands-on” learning activities in the lab.

This training course is designed as a flexible delivery option that can be offered during the day, evening, and/or weekend as part of the college’s IMAC program. IMAC is an acronym for Industry-Based Modularized Accelerated Credentials.

Credentials Awarded:

Five (5) college credits and a Welding Level I certificate are awarded upon successful completion.

Prerequisite:

No previous welding experience or course work is required. A signed Welding Student Learning Contract is required before admittance to the training course.

Competencies:

Upon completion of this training course, the student can:

1. Apply cutting, welding, and shop safety procedures.
2. Apply principles of Oxy-Fuel and Plasma Arc cutting processes.
3. Apply principles of SMAW, GMAW, and GTAW welding processes.

Outline/Learning Modules:

I. Safety

- A. General shop safety
- B. Oxy-Fuel safety
- C. Arc welding and Plasma arc cutting safety

II. Oxy-Fuel Cutting

- A. Theory of operation
- B. Setup and operating techniques

III. Plasma Arc Cutting

- A. Theory of operation
- B. Setup and operating techniques

IV. Shielded Metal Arc Welding (SMAW)

- A. Theory of operation
- B. Setup and operating techniques

V. Gas Metal Arc Welding (GMAW)

- A. Theory of operation
- B. Setup and operating techniques

VI. Gas Tungsten Arc Welding (GTAW)

- A. Theory of operation
- B. Setup and operating techniques

Experiments/Activities:

1. Apply cutting, welding, and shop safety procedures.
2. Perform Oxy-Fuel and Plasma Arc cutting processes.
3. Perform SMAW, GMAW, and GTAW welding processes.

Learning Resources:

The learning materials used for this course include: *Safety Quick Guide for Arc Welding and Cutting the Safe Way*, *Guidelines for Shielded Metal Arc (Stick) Welding (SMAW)*, *Guidelines to Gas Metal Arc Welding (GMAW)*, and *Guidelines to Gas Tungsten Arc Welding (GTAW)* available through Miller Electric Manufacturing Co., 1635 W. Spencer St., P.O. Box 1079, Appleton, WI 54912-1079.

Website: <http://www.millerwelds.com/resources/bookspamphlets.html>

This product was funded by a grant awarded under the President's Community-Based Job Training Grants as implemented by the U.S. Department of Labor's Employment & Training Administration. The information contained in this product was created by a grantee organization and does not necessarily reflect the official position of the U.S. Department of Labor. All references to non-governmental companies or organizations, their services, products, or resources are offered for informational purposes and should not be construed as an endorsement by the Department of Labor. This product is copyrighted by the institution that created it and is intended for individual organizational, non-commercial use only.