South Central College

WELD 1136 Advanced Gas Metal Arc Welding

Common Course Outline

Course Information

Description This course is more concentrated on the pulse welding of Gas Metal Arc Welding (GMAW). Student will learn how pulse on carbon steel, stainless steel, and aluminum. Students will learn more about the Flux Core Arc Welding (FCAW). At the end of the course student will take D1.1 weld test(s) in Pulse and in FCAW. (Prerequisites: WELD 1035 - Introduction to GMAW or equivalent from another technical college or instructor approval.)

Total Credits 2

Total Hours 48

Types of Instruction

Instruction Type	Credits/Hours
Lecture	1/16
Lab	1/32

Pre/Corequisites

WELD 1035 - Introduction to GMAW or equivalent from another technical college or instructor approval.

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Course Competencies

1. Demonstrate how to obtain proper program on the pulse welders for the material being welded.

Learning Objectives

Determine the correct GMAW-pulse mode for the welding equipment in the lab, according to shielding gas, electrode diameter and type with the material being welded.
Demonstrate how to find the different pulse settings for each type of machine.
Set the correct arc length for the pulse mode being used.

2. Set up equipment and supplies necessary to perform GMAW pulse on carbon steel, stainless steel, and aluminum.

Learning Objectives

Choose proper equipment settings and pulse program to weld on specific base metals.
Utilize proper welding gases for the transfer mode and the material being welded.

3. Demonstrate GMAW-pulse concepts and techniques in creating quality weldments on ferrous and non-ferrous material.

Learning Objectives

Use the proper angle of the gun to the joint and direction of gun travel for the type of weld being made in the flat, horizontal, vertical, and overhead positions.
Apply GMAW - Pulse and adjust arc length settings for the position and material being welded.
Perform proper weld sequencing to produce an acceptable visual weld.

4. Demonstrate FCAW process on carbon steel and stainless steel.

Learning Objectives

Demonstrate how to use the FCAW GS (Gas Shielded) and FCAW SS (self shielded) process in various positions.
Demonstrate how to select the machine settings and gas for the carbon steel and stainless steel using the FCAW process.

5. Produce D1.1 practice test for GMAW pulse and FCAW

Learning Objectives

Create quality weld test with the pulse mode on carbon steel, stainless steel, and aluminum.
Identify any causes of various welding defects; make necessary adjustments.

6. Prepare for American Welding Society D 1.1 certification test.

Learning Objectives

Practice all types of positions necessary to pass AWS D 1.1 pulse 1G, 2G, 3G, 4G, on carbon steel, stainless steel, and aluminum.
Construct final weld coupon for D1.1 bend testing.

SCC Accessibility Statement

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room C-112, (507) 389-7222; Faribault: Room A-116, (507) 332-5847.

Additional information and forms can be found at: www.southcentral.edu/disability

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