



South Central College

WELD 1025 Introduction to Shielded Metal Arc Welding (SMAW)

Course Outcome Summary

Course Information

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| Description | This course will provide an introduction to Shielded Metal Arc Welding (SMAW) on carbon steel in various positions along with an introduction to welding safety, welding, and electrode compatability. Components of SMAW will be introduced, including selection of materials and steps necessary to complete tasks. Basic information about duty cycle, cable sizing, arc blow, and electrodes will also be presented. (Prerequisite: None) |
| Total Credits | 1 |
| Total Hours | 32 |

Types of Instruction

| Instruction Type | Credits/Hours |
|------------------|---------------|
| Lab | 1 / 32 |

Pre/Corequisites

None

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Describe basic components of shielded metal arc weldments.

Learning Objectives

Use basic welding terminology.
Describe general weld joint configurations.

2. Recognize basic metallurgical components used in SMAW.

Learning Objectives

Identify base metals by elementary metallurgy (mild steel, cast iron, low alloy steels, aluminum, brass, copper, stainless steel).

Differentiate base metals and filler metals by choosing the correct filler metal for certain basic applications.

3. Prepare welding equipment to accomplish given tasks.

Learning Objectives

Select appropriate welding rod.
Determine proper machine amperage.
Select correct polarity.

4. Utilize knowledge of rod manipulation in SMAW.

Learning Objectives

Describe rod angles and rod manipulation techniques.
Practice proper rod manipulation techniques.

5. Demonstrate single pass and multiple pass welding techniques.

Learning Objectives

List the proper steps in welding a multiple pass weldment.
Describe a single pass weldment.
Practice single pass and multiple pass welding techniques.

6. Utilize knowledge of electrodes in regards to shield metal arc welding.

Learning Objectives

Identify types of electrodes and their uses.
Select proper electrode for a given SMAW task.

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 B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

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

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.