



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION: Workforce Development**

**COURSE: WSP 1230 FCAW Mild Steel, All Positions**

Date: Summer 2022

Credit Hours: 2

*Complete all that apply or mark "None" where appropriate:*

Prerequisite(s): None

Enrollment by assessment or other measure?  Yes  No

If yes, please describe:

Corequisite(s): None

Pre- or Corequisite(s): None

Consent of Instructor:  Yes  No

Delivery Method:  **Lecture**                      **1 Contact Hours** (1 contact = 1 credit hour)  
 **Seminar**                              **0 Contact Hours** (1 contact = 1 credit hour)  
 **Lab**                                        **2 Contact Hours** (2-3 contact = 1 credit hour)  
 **Clinical**                                **0 Contact Hours** (3 contact = 1 credit hour)  
 **Online**  
 **Blended**  
 **Virtual Class Meeting (VCM)**

Offered:  **Fall**     **Spring**     **Summer**

**CATALOG DESCRIPTION and IAI NUMBER (if applicable):**

Theory and practice in the preparation and welding of mild steel plate in all positions using FCAW process with cored wire electrode, in gas shielded and self-shielded.

**ACCREDITATION STATEMENTS AND COURSE NOTES:**

None

**COURSE TOPICS AND CONTENT REQUIREMENTS:**

Shop safety

Basic Print reading

Welding joints positions and symbols

Power sources, wire feeders for FCAW

Shielding gasses used in FCAW

GMAW electrode classification

PPE requirements

FCAW welding principles

FCAW metal transfer

FCAW welding techniques

FCAW Special ferrous welding applications

**INSTRUCTIONAL METHODS:**

Classroom lecture, weld lab hands-on instruction

**EVALUATION OF STUDENT ACHIEVEMENT:**

1. Read all material before coming to class
2. Participate in classroom and lab discussions and lectures.
3. Attend all class and lab sessions
4. Complete all required assignments, exercises, tasks, quizzes and tests.
5. Self-asses welds, maximize lab time.

The following grading scale will be used:

A= 90-100

B= 80-89

C= 70-79

D= 60-69

F= 0-59

**INSTRUCTIONAL MATERIALS:****Textbooks**

Modern Welding textbook and workbook, G-W, 12th edition

**Resources**

Current Learning Management System (LMS) content available

Videos

Handouts

Lincoln Electric Welding technology center

Hobart institute of Welding technology

## **LEARNING OUTCOMES AND GOALS:**

### **Institutional Learning Outcomes**

- 1) Communication – to communicate effectively;
- 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion;
- 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally;
- 4) Responsibility – to recognize how personal choices affect self and society.

### **Course Outcomes and Competencies**

1. Safe use of all equipment as well as all safety guidelines will be discussed and utilized.
2. Establish an electric arc and deposit a 6” long bead in both stringer and weave style in all positions.
3. Demonstrate restarts as needed in both stringer and weave beads in all positions.
4. Demonstrate the ability to produce a surfacing weld in all positions.
5. Demonstrate the ability to produce a single pass fillet weld, in lap, tee and corner joints in all positions.
6. Demonstrate the ability to produce a multi-pass fillet weld, in lap, tee and corner joints in all positions.
7. Demonstrate the ability to conduct a Visual Examination of these welds to AWS criteria.