



# **ILLINOIS VALLEY COMMUNITY COLLEGE**

## **COURSE OUTLINE**

**DIVISION: Workforce Development**

**COURSE: WLD 1202 SMAW Mild Steel, Vertical Position**

Date: Spring 2020

Credit Hours: 2

Prerequisite(s): WLD 1200

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**

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

IAI Equivalent –**Only for Transfer Courses**-go to <http://www.itransfer.org>:

### **CATALOG DESCRIPTION:**

Theory and practice in the preparation and welding of mild steel plate in the vertical position upward progression, using E6010 and E7018 electrodes, downward progression using E6010 will be explored.

## GENERAL EDUCATION GOALS ADDRESSED

*[See last page for Course Competency/Assessment Methods Matrix.]*

### Upon completion of the course, the student will be able:

*[Choose up to three goals that will be formally assessed in this course.]*

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciation for diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

### EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

*[Outcomes related to course specific goals. See last page for more information.]*

#### Upon completion of the course, the student will be able to:

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.
3. Demonstrate restarts as needed in both stringer and weave beads.
4. Demonstrate the ability to produce a surfacing weld.
5. Demonstrate the ability to produce a single pass fillet weld, in lap, tee and corner joints.
6. Demonstrate the ability to produce a multi-pass fillet weld, in lap, tee and corner joints.
7. Demonstrate the ability to conduct a Visual Examination of these welds to AWS criteria.

### MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

*[For each of the goals selected above, indicate which outcomes align with the goal.]*

Goals	Outcomes
First Goal	
To apply analytical and problem solving skills to personal, social, and professional issues and situations.	1,2,3,4,5,6,7
Second Goal	
To understand and use technology effectively and to understand its impact on the individual and society.	1,2,3,4,5,6,7

Third Goal	
To recognize what it means to act ethically and responsibly as an individual and as a member of society.	1,2,3,4,5,6,7

**COURSE TOPICS AND CONTENT REQUIREMENTS:**

Shop safety  
 Basic Printreading  
 Welding joints positions and symbols  
 Arc welding power sources  
 SMAW electrode classification  
 PPE requirements  
 DC arc welding fundamentals  
 AC arc welding fundamentals  
 SMAW welding techniques

**INSTRUCTIONAL METHODS:**

Classroom lecture, weld lab hands-on instruction

**INSTRUCTIONAL MATERIALS:**

Welding textbook and workbook  
 Welded examples  
 Selected handouts  
 Videos

**STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

Modern Welding textbook and workbook, G-W, 12<sup>th</sup> edition  
 All appropriate personal protective equipment to safely perform in the welding lab  
 Students will be graded with examinations  
 Visual inspection of welded specimens  
 Visual inspection of final welded specimen

The following grading scale will be used:

A= 90-100  
 B= 80-89  
 C= 70-79  
 D= 60-69  
 F= 0-59

**OTHER REFERENCES**

Lincoln Electric Welding technology center  
 Hobart institute of Welding technology



