



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Workforce Development

COURSE: WLD 2201 GMAW Vertical Up

Date: Spring 2020

Credit Hours: 2

Pre/Co-requisite(s): WLD 1209

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 using GMAW process with solid wire electrode.

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
 Power sources, wire feeders for GMAW
 Shielding gasses used in GMAW
 GMAW electrode classification
 PPE requirements
 GMAW welding principles
 GMAW metal transfer
 GMAW 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, 12th 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

Course Competency/Assessment Methods Matrix

(Dept/# Course Name)	Assessment Options																															
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D						
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																
Safe use of all equipment as well as all safety guidelines will be discussed and utilized				X			X	X						X			X		X													
Establish an electric arc and deposit a 6" long bead in both stringer and weave style				X			X	X						X			X		X													
Demonstrate restarts as needed in both stringer and weave beads				X			X	X						X			X		X													
Demonstrate the ability to produce a surfacing weld				X			X	X						X			X		X													
Demonstrate the ability to produce a single pass fillet weld, in lap, tee and corner joints				X			X	X						X			X		X													

Demonstrate the ability to produce a multi-pass fillet weld, in lap, tee and corner joints				X			X	X					X		X	X														
Demonstrate the ability to conduct a Visual Examination of these welds to AWS criteria				X			X	X					X		X	X														