



# **ILLINOIS VALLEY COMMUNITY COLLEGE**

## **COURSE OUTLINE**

**DIVISION: Workforce Development**

**COURSE: WED 2200 Welding Blueprint Reading**

Date: Spring 2020

Credit Hours: 3

Prerequisite(s): None

Delivery Method:  **Lecture**                    **3 Contact Hours** (1 contact = 1 credit hour)  
 **Seminar**                    **0 Contact Hours** (1 contact = 1 credit hour)  
 **Lab**                                **0 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:**

This course relates the basic drafting principles and how they determine the information the designer is conveying through oblique, isometric and/or multi-view engineering drawings. Sketching, related math, joint design, welding processes and basic material stresses are also discussed in relation to drawings. The welding symbol is explored in segments pertaining to the weld and weld process as called out. Piping on engineering drawings, basic metallurgy and nondestructive examination symbols as related are discussed. Lecture, three and one half hours a week.

## 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. Read and understand oblique and isometric drawings.
2. Read and understand multi-view engineering drawing.
3. Perform math calculations involving fractions, decimals, area and volume.
4. Interpret the welding symbol and describe the finished weld as requested by the drawings.
5. Measure in Imperial feet and inches, understand tenths, hundredths and thousandths of inch and feet, S.I. metric measurements.

### 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
Second Goal	
To understand and use technology effectively and to understand its impact on the individual and society.	1,2,3,4,5,6

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

**COURSE TOPICS AND CONTENT REQUIREMENTS:**

Conventional prints  
Object representation  
Related math  
Welding symbols  
Joint design  
Fasteners and structural steel  
Welding processes  
Welding symbols for specific welds  
    Fillet  
    Groove  
    Back and Backing  
    Plug and Slot  
    Surfacing  
    Edge  
    Spot, Seam, Stud  
Pipe  
Basic Welding metallurgy  
Non destructive examination  
Basic Geometric Design and Tolerancing

**INSTRUCTIONAL METHODS:**

Classroom lecture.  
Computer and hands-on laboratory instruction.  
Demonstration  
Exams and quizzes

**INSTRUCTIONAL MATERIALS:**

Text: Printreading for Welders, American Technical Publishers, Fifth edition, Proctor and Gosse, 2014  
Hobart Institute of Technology, Blueprint Reading for Welders and Fitters, 2008

**STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

Students are required to purchase the assigned textbook and packet. Students will be required to maintain a high level of attendance to lectures. Students will be evaluated on attendance, assignments, discussion participation, quizzes and exams. The following grading scale will be used to compute the grade.

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												
Read and understand oblique and isometric drawings							X	X	X				X																								X	
Read and understand multi-view engineering drawing							X	X	X				X																									X
Perform math calculations involving fractions, decimals, area and volume							X	X	X				X																									X
Interpret the welding symbol and describe the finished weld as requested by the drawings.							X	X	X				X																									X
Measure in Imperial feet and inches, understand tenths, hundredths and thousandths of inch and feet, S.I. metric measurements.							X	X	X				X																									X