



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION: Workforce Development**

**COURSE: MET 1202 Manufacturing Materials & Processes I**

Date: Spring 2023

Credit Hours: 3

*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:	<input checked="" type="checkbox"/> <b>Lecture</b>	<b>2 Contact Hours</b> (1 contact = 1 credit hour)
	<input type="checkbox"/> <b>Seminar</b>	<b>0 Contact Hours</b> (1 contact = 1 credit hour)
	<input checked="" type="checkbox"/> <b>Lab</b>	<b>2 Contact Hours</b> (2-3 contact = 1 credit hour)
	<input type="checkbox"/> <b>Clinical</b>	<b>0 Contact Hours</b> (3 contact = 1 credit hour)

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

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

This course introduces the student to basic manufacturing processes. This course is designed to develop fundamental understanding of the processes used in manufacturing various products. The course covers areas such as casting, forging, rolling, and machining techniques. This course also has a lab in which students will gain hands-on experience in using basic machine tools such as lathe, milling machine, drill presses, and grinding machines. Students will learn how to read and utilize precision measuring instruments such as micrometers, calipers, and height gages. This course also includes a study of the composition and physical properties of ferrous and non-ferrous metals.

## **ACCREDITATION STATEMENTS AND COURSE NOTES:**

None

## **COURSE TOPICS AND CONTENT REQUIREMENTS:**

- 1.0 Shop safety
- 2.0 Layout
- 3.0 Measuring tools and systems
- 4.0 Thread Systems
- 5.0 Cutting tools and lubricants
- 6.0 Drill press/Saws/Grinders
- 7.0 Lathes
- 8.0 Milling Machines
- 9.0 Manufacturing Materials

## **INSTRUCTIONAL METHODS:**

Lecture  
Instructional Videos  
Demonstration  
Hands on Lab

## **EVALUATION OF STUDENT ACHIEVEMENT:**

Quizzes  
Tests  
Comprehensive Final  
Labs projects

## **INSTRUCTIONAL MATERIALS:**

### **Textbooks**

G-W Publisher- Machining Fundamentals, 11<sup>th</sup> edition

### **Resources**

PowerPoint slides

## **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. Develop a fundamental understanding of manufacturing processes and language.
2. Understand and use various machines such as lathes, milling machines, drill presses and grinding machines.
3. Care for and use various measuring instruments used in manufacturing
4. Perform layout tasks and build parts off prints