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:

☑ Lecture  2 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)

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, 11th 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