

ILLINOIS VALLEY COMMUNITY COLLEGE



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: MET-1202; Manufacturing Materials & Processes I

Date: Spring 2014

Credit Hours: 4

Prerequisite(s): None

Delivery Method: **Lecture** **2.5 Contact Hours** (1 contact = 1 credit hour)
 Seminar **0 Contact Hours** (1 contact = 1 credit hour)
 Lab **3 Contact Hours** (2 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 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 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. Lecture, two and one-half hours per week; lab, three hours per week.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

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

[Choose those goals that apply to this course.]

- To apply analytical and problem solving skills to personal, social and professional issues and situations.
- To communicate orally and in writing, socially and interpersonally.
- To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
- To understand and use contemporary technology effectively and to understand its impact on the individual and society.
- To work and study effectively both individually and in collaboration with others.
- To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
- To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
- To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

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

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

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

INSTRUCTIONAL MATERIALS:

Machining Fundamentals, ninth edition, ISBN 978-1-61960-209-0, Copyright 2014

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

Quizzes

Tests

Comprehensive Final

Lab projects

OTHER REFERENCES

