



MTT 112L

Division: Career and Technical Education

Department: Machine Tool Technology

Course: MTT 112L

Title: Machine Tool Shop I

Catalog Description:

This is a lab course for first semester students. It teaches the manufacture of metal parts using machine tool operations and covers hands-on operations of the engine lathe, drill press, pedestal grinder, and vertical milling machine. Students practice all common operations done on a metal cutting lathe and are introduced to basic introduction of the vertical milling machine. The course includes demonstrations, practical applications, and labs. Completers should have entry skills for the machine tool industry.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 5; Lecture: 0; Lab: 15

Clock/Hour Requirements: 225

Offered for Non-Credit: No

Prerequisites: None

Corequisites: MTT 1110

Justification:

This course teaches students in the fundamentals approved by our program advisory committee and is comparable to UVSC MTT 1120.

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

- set up and operate engine lathes, drilling machines, and vertical milling machines
- perform layout and measuring operations with layout and measuring tools
- understand safety rules, regulations, and procedures associated with machine tool technology.

Content:

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

- proper safety techniques
- grinding lathe tools
- bench and pedestal grinders
- lathe controls
- lathe operations

- measuring tool procedures
- milling machine controls
- milling machine operations
- hand tool and bench work.

General Education Outcomes:

- 4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media. Students will research projects through the *Machinery Handbook*, Internet, and company-specific websites. Specifications on material structure, machineability, and other details for a given job will need to be identified, evaluated, and interpreted before being applied to production.
- 6) Apply computational skills to a variety of contexts. Previously acquired mathematical skills will be applied in a lab setting. Students will be required to compute details of layout, reverse engineering, and programming as they prepare and complete a given project.
- 7) Apply scientific reasoning to a variety of contexts. Through the machining process, students are required to assess problems for possible solutions. Students will be involved in planning, design, and application of concepts they have learned in order to arrive at a quality-controlled product. Students will need to apply these skills to specific projects in order to arrive at the most efficient solution.

Key Performance Indicators:

In class:

- Students will demonstrate safety practices while working in the shop.
- The student s knowledge and skills are tested by the ability to complete assignments with a 75% minimum accumulated score.

Following class:

- Upon completion of the course, competency will be demonstrated in subsequent courses and on projects.

Representative Text and/or Supplies:

- Kibbe, Neely, Meyer, White, *Machine Tool Practices*, current edition, Regents/Prentice Hall.

Optimum Class Size: 10

Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

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I hereby find this course consistent with the goals and resources of the Machine Tool Technology Department:

Alan Hart, AAS, Instructor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)