MTT 1225

Division: Career and Technical Education
Department: Industrial Technology
Course: MTT 1225
Title: Machine Tool Shop II
Catalog Description:

This lab course is for second semester students. It teaches advanced operation of vertical milling machines and introduces operation of horizontal milling machines, grinders, shapers, and turret lathes. The course includes the combining of machine operations for the manufacturing of products and teaches on-call response to customer job demand. The course includes hands-on experience and demonstrations.

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: Yes
Prerequisites: MTT 1125, MTT 1150

Corequisites: MTT 1210

Justification:

This course teaches students advanced application and procedures approved by our program advisory committee.

Student Learning Outcomes:

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

- set up and operate a horizontal milling machine for common machine operations, such as gear cutting, facing, slotting, angle milling, and helical milling
- complete a minimum of one project to print tolerances and specifications that require both milling machines and lathes
- complete a minimum of five school or industry jobs that are brought in from outside the machine shop and estimate the time required to finish the work to customer satisfaction
- produce one basic jig or fixture to industrial standards for the production of a minimum of five parts
- complete the machine control EDM and CNC mill operation at an introductory level.

Content:

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

- shop safety
- review projects
- develop manufacturing plan for major project
- CNC operations demonstration
- cylindrical grinding demonstration
- cutter grinding demonstration
- band welding demonstration
- lathe work major project
- fixture building
- machine gear blank
- machining major project
- grind end mill demonstration
- cut spur gear.

General Education Outcomes:

Applied Education Outcomes:

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

Students will learn the theory of Machining Fundamentals and will learn hands on in the lab with required projects to prepare them for entry level jobs on conventional machines.

3) Students will demonstrate safe practices and awareness of potential hazards in their field of expertise.

Students will participate in a weekly safety meeting where they will take their turn as safety chair. Students will demonstrate safety in the lab of those comparable to industry standards.

Key Performance Indicators:

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- safety practices while working in the shop
- written tests
- quizzes
- assignments
- competency in subsequent courses and on projects.

Representative Text and/or Supplies:

Optimum Class Size:

10

Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

Alan Hart, AAS, Instructor

I hereby find this course consistent with the goals and resources of the Industrial 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)