



MTT 2430

Division: Career and Technical Education

Department: Industrial Technology

Course: MTT 2430

Title: Computer Numerical Control Operations

Catalog Description:

This course is for second year students who want to enhance their programming and operating skills. It reviews different manufacturing materials and cutting processes. Students learn about industrial computer aided machining (CAM) software and the process of computer aided manufacturing. It emphasizes fixturing and basic machine setups.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 8; Lecture: 3; Lab: 15

Clock/Hour Requirements: 270

Offered for Non-Credit: Yes

Prerequisites: MTT 2330

Corequisites: N/A

Justification:

Students will enhance their programming and operating skills. This course is approved by the program advisory committee.

Student Learning Outcomes:

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

- develop computer aided drafting (CAD) drawings using CAD software
- use CAM software to develop a program to produce a part to specifications on the print
- understand how to convert CAD files to CAM files
- develop fixtures that hold work securely for machine productivity.

Content:

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

- introduction to CAD design software
- using CAM software to produce two dimensional programs
- using CAM software to produce three dimensional programs
- converting CAM CAD files to CAM software programs
- learn different fixturing techniques for CNC machines.

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 theory from Mastercam mill, Mastercam lathe, and Mastercam design and will learn hands on in the lab with required projects to prepare them for entry level jobs on conventional machines.

Instructor will observe students as they practice these skills and give oral feedback.

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:

- *Mastercam Mill, Mastercam Lathe, Mastercam Design*, current editions, CNC Software Inc.

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)