MTT 1000

Division: Career and Technical Education
Department: Industrial Technology
Course: MTT 1000
Title: Survey of Machine Tool Technology
Catalog Description:

This is an introductory course for those interested in the world of manufacturing. It emphasizes the machine tool field and includes hands-on activities with metal cutting lathes and milling machines.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 2; Lecture: 1; Lab: 3
Clock/Hour Requirements: 60
Offered for Non-Credit: Yes
Prerequisites: N/A

Corequisites: N/A

Justification:

This course provides instruction in the fundamentals of machine tool technology approved by the program advisory committee.

Student Learning Outcomes:

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

- increase their awareness of careers in the world of manufacturing
- demonstrate safe shop practices while working with equipment
- demonstrate how to make accurate measurements with precision measuring instruments
- demonstrate and use proper lathe practices
- demonstrate and use proper mill practices.

Content:

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

- a job awareness search using various media sources

- proper safety techniques
    - personal safety
    - shop safety
    - equipment safety
- care and use of measuring equipment
    - steel rule
    - sicrometers
    - calipers
    - gauges
- use and care of the engine lathe
- use and care of the ram and turret mill
- introduction to Computer Numerical Control (CNC).

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. S pecifications on material structure, machineability, and other details for a given job will need to be identified, evaluated, and interpreted before being applied to production.

Applied Education Outcomes:

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

Students will participate in a weekly safety meeting in which they will take turns as safety chair. Students will demonstrate safety in the lab comparable to industry standards. 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:

- Walker, John R, *Machining Fundamentals,* current edition, The Goodheart - Willcox Company Inc., T inley Park, Illinois.

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)