

MURRAY STATE UNIVERSITY

DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY

COURSE SYLLABUS

Course Number: ITD 330

Credit Hours: 4

I. TITLE: Machine Tool Processes

II. CATALOG DESCRIPTION:

A study in the shaping of metallic products using traditional and computer numerical control processes and equipment. Includes examination of precision measuring methods, cutting tools properties and methods required in achieving an efficient, economical, and safe material removal process.

III. PURPOSE:

The majority of industrial technology or manufacturing technology jobs are related to metal processing industries which require graduates who are knowledgeable about the concept of metal machining as well as the capabilities and limitations of machine tools. Experience in manual and CNC machining is an indispensable first step in achieving this goal. The main purpose of this course is to familiarize the students with the basic concept of machining and major processes and techniques employed in machine tool technology using a hands-on laboratory approach.

IV. COURSE OBJECTIVES:

1. To appreciate the working knowledge involved in making a product from drawing to fabrication.
2. To experience real-world problems involved in making a product.
3. To develop an understanding of capabilities and limitations of conventional machine tools including drill, lathe and milling machines, through laboratory activities and projects.
4. To learn proper safety procedures in the metal machining industry.

V. CONTENT OUTLINE:

- A. Laboratory safety
- B. General laboratory skills
- C. Cutting tools
- D. Automated manufacturing
- E. Electro-machining process
- F. Metal characteristics
- G. Nontraditional machining techniques
- H. Computer numerical control

VI. INSTRUCTIONAL ACTIVITIES:

- A. Lecture and demonstrations
- B. Laboratory exercises, experiments, and projects
- C. Classroom assignments
- D. Homework
- E. Presentation
- F. Field trip

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:

- A. Lab work in the machine tool lab.

VIII. RESOURCES:

- A. Metal machining laboratory
- B. Equipment and supplies

IX. GRADING PROCEDURES:

All late work will be penalized by a reduction of 10% of points for each 24 hours that the assignment is late.

- A. Lab 60%
- B. Homework 15%
- C. Quiz 25%

Grading Scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	E

X. ATTENDANCE POLICY:

This course will adhere to the policy published in the MSU Undergraduate Bulletin.

Attendance will be taken at every scheduled class and laboratory. No make-ups unless:

- A. Organized university trip.
- B. Illness or death in immediate family.
- C. Illness of student.

Each one of these will require either a doctor's statement or a signed statement from the individual in charge of the trip.

Make-up examinations are the student's responsibility. No excuses will be accepted after the exam is given. The instructor must be notified prior to the scheduled exam. If not, the student forfeits their right to take the exam. Quizzes will not be made up unless prior acceptable excuse for absence has been received by the instructor. Final score for the lab will be calculated by multiplying the raw lab grade by the percentage of the attendance.

XI. ACADEMIC HONESTY POLICY:

This course will adhere to the policy published in the MSU Undergraduate Bulletin.

XII. TEXT AND REFERENCES:

Fitzpatrick, M. (2011). *Machining and CNC Technology*. Career Education.

XIII. PREREQUISITES:

ITD 130

XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or other provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Sabrina Y. Dial, Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).