

EDMM 2540
MACHINING PROCESSES
COURSE SYLLABUS

Course Description:

Introduction of both traditional and non-traditional methods of machining of materials. Relationship of machines, jigs and fixtures, and productive tooling to the machining of discrete components. Introduction to measuring and gauging as it relates to machining practices. Hands on experience with traditional CNC equipment, including production techniques.

Textbook:

Machine Tool Practices, by Kibbe R.R., Meyer R.O, Neely, J.E., and White W.T. (any edition)
Recommended

Course Coordinator :

Dr. Pavel Ikonomov, Associate Professor: Engineering Design, Manufacturing, and Management Systems Pavel.Ikonomov@wmich.edu Office Rm. # E221 Parkview Campus, Phone (269) 276-3284.

Prerequisites by topic:

EDMM 1500 or EDMM 2200– Introduction to Manufacturing,

Performance Objectives: Students who successfully complete this course should:

1. Understand the basic principles and techniques of chip removal applied to; near net shaping of a variety of materials
2. Be able to analyze machine set up and operation techniques
3. Understand the dimensional characteristics of interchangeable parts.
4. Be able to apply quality principles as a productivity tool.
5. Develop an appreciation of both traditional and non-traditional machining theory and practice
6. Understand basic CNC principles

Course requirements:

Students enrolled in this course are expected to:

1. Attend all lectures and laboratories
2. Participate in class discussions and group activities
3. Display a mastery of readings and class examinations
4. Conduct research associated with class assignments
5. Complete all written assignments according to prescribed instructions and due dates.

NOTE: You must pass the Test1, Test2, Final examination, Group project and the laboratory in order to pass this course. *Due the arrangement of the labs work, missing more than one or two labs may lead to discharge from the course.*

Academic Integrity:

You are responsible for making yourself aware of and understanding the University policies and procedures that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. (The academic policies addressing Student Rights and Responsibilities can be found in the Undergraduate Catalog at <http://catalog.wmich.edu/content.php?catoid=22&navoid=882>). If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s) and if you believe you are not responsible, you will have the opportunity for a hearing. You should consult with your instructor if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.

Course Requirements – Special Instructions:

Much of the course material is covered in your lectures and textbook. All of the material found on the examinations will be covered during the lecture. Information presented in class, which is not found in your textbook, can be found in the library or on the Internet. You are expected to use these resources frequently.

Group Project: (300 points)

You will be assigned several productivity exercises during the lecture in which you will make some choices on how to best machine a production quantity of discrete parts. Eventually the class will break up into five person groups to work on **Graded** productivity problems (see the schedule).

NOTE: Some group members are expected to do better than others based on their level of contribution. It's recommended that your group determine early on how participation will be evaluated.

Class participation: (50 points)

Student-supplied material and equipment:

1. ANSI approved safety glasses
2. Laboratory notebook
3. Appropriate clothing and foot ware
4. Lock
5. USB drive, Internet storage/backup, etc.

Laboratory Activities (350 points):

There are laboratory projects designed to illustrate the machining techniques presented during the lecture portion of the course. Although you are not expected to become a skilled or proficient machine operator, these projects reinforce the performance objectives. You must assemble a laboratory notebook and participate in all laboratory lectures, demonstrations and, quizzes. Your laboratory instructor will further explain his expectations including all safety, lockers, clean up, tool return and other housekeeping items.

Evaluation:

- Two classroom tests-50 points ea. (total 100)
- Laboratory-350 points
- Class participation and quizzes -50 points
- Group project-300 points
- Extra credit interview/lab activities -15 points (Per verbal instructions)
- Final examination-200 points

Grading Scale:

93-100=A, 87-92=B, 82-86=B, 77-81=CB, 72-76=C, 67-71=DC, 62-66=D, Bellow 61=E

Examination make-up policy:

If an emergency arises which causes you to miss a test or assignment, please discuss the matter with your instructor **beforehand**. Approval for making up a missed test or any other required assignment is **not automatic**.

Incomplete Grade policy:

Incomplete grades can only be given for reasons beyond the control of the student, and not for failing work.