

**NORTHEASTERN TECHNICAL COLLEGE  
COURSE OUTLINE**

|   |                          |                                      |  |            |              |
|---|--------------------------|--------------------------------------|--|------------|--------------|
| <b>COURSE:</b><br>MTT                           | <b>PREFIX NO.</b><br>233 | <b>EFFECTIVE DATE</b><br>SPRING 2007 | <b>NEXT REVIEW DATE</b><br>SPRING 2008 |            |              |
| <b>TITLE:</b><br>MACHINE TOOL AND DIEMAKING III |                          | <b>CREDITS</b><br>5                  | <b>CONTACTS</b>                        |            |              |
|   |                          |                                      | <b>CLASS</b>                           | <b>LAB</b> | <b>TOTAL</b> |
|   |                          |                                      | 2                                      | 9          | 5            |

**PREREQUISITES:** MTT 232

**DESCRIPTION:** This course covers the manufacture and use of a progressive die or tools.

**TEXTBOOK(S) OR ALTERNATIVE:** Advance Diemaking

**MATERIALS (specifying those to be purchased by student):**

Safety glasses

**COLLATERAL READING:**

Die Design Fundamentals  
Machinery's Handbook 26th Edition  
The Machinist Ready Reference

**CLASS MANAGEMENT ACTIVITIES (Attendance, tardies, testing, etc.):**

**Attendance:** Student must attend 90% of classes.

**Tardies:** Three tardies will constitute one absence.

**Projects:** (Appearance and Tolerance)

**Academic Dishonesty:** Students are expected to do their own work.

Please refer to the NETC Student Code and Grievance Procedure for a definition of academic dishonesty and an outline of the disciplinary action that may result therefrom.

**Student ID:** It is mandatory that every student wear his or her student ID at all times. Instructors are required to dismiss students without ID from class. The student may get his/her ID and return to class before the midpoint of the class. If the student cannot get an ID and return to class by the midpoint, the instructor will record the absence.

**Disabilities Statement:** Students with disabilities are encouraged to contact the Vice President for Student Services to discuss needs or concerns as they pursue an academic program and participate in campus life. The Vice President for Student Services will provide guidance regarding official documentation of disabilities and/or accommodation of needs. (See College Catalog)

**RESOURCES (A-V, persons, tools/equipment):**

**COURSE TOPICAL OUTLINE:** (List topics and sub-topics of course) and Calendar or approximate length of time devoted to topic.

**OBJECTIVES OF COURSE:** See Pages 3 and 4.

**INSTRUCTIONAL METHODS TO COMPLETE OBJECTIVES:**

Lecture  
Hands on operation in the Machine Tool Lab.

**EVALUATIVE METHODS TO APPRAISE OBJECTIVES:** The student will be graded on the following:

Care of equipment.....10%  
Work habits.....10%  
Die blueprints.....20%  
Die and piece part.....60%

**GRADING:**

100 - 93 = A  
92 - 85 = B  
84 - 77 = C  
76 - 69 = D  
68 -BELOW = F

**TO RECEIVE FINAL GRADE:** Students must complete their Progressive Die to receive a grade. Students must participate in final lab clean-up or will receive a grade of "I". Lab clean-up will be announced when the exam schedule is posted.

**PARTICIPATION:** Evaluation of your participation will be based on the following:

- (100 - 80) Comes to class prepared; voluntarily and enthusiastically participates in classroom activities, presentations, and clean-up. Stimulates creativity and demonstrates excellent completion of in-class assignments. Must demonstrate respect to instructor and fellow students.
- ( 80 - 60) Comes to class prepared; usually participates in classroom activities, presentations, and clean-up. Demonstrates satisfactory completion of in-class assignments. Must have above average attendance, a positive attitude, and demonstrate respect for instructor and fellow students.
- ( 60 - 40) Usually comes to class prepared; occasionally participates in classroom activities, presentations, and clean-up. Completes most in-class assignments. Has average attendance, a positive attitude, and demonstrates respect for instructor and fellow students.

- ( 40 - 20) Occasionally comes to class prepared; reluctantly participates in classroom activities. Occasionally completes in-class assignments. Has below average attendance, uncooperative attitude, and demonstrates lack of respect for instructor and fellow students.
- ( 20 - 0) Seldom comes to class prepared; uncooperative and disruptive to class discussions or other learning activities. Has poor attendance and shows disrespect for instructor and fellow students. Avoid class clean-up and/or has a negative attitude.

**DUTY:** DESIGN A PROGRESSIVE DIE  
**TASK:** Make A Sketch Of A Progressive Die

**PERFORMANCE OBJECTIVE:**  
Student will make a sketch of a progressive die including all necessary dimensions.

**LEARNING ACTIVITIES:**  
1) Read "Advanced Diemaking" Chapters 5-7, Study all figures  
2) The piece part drawing is attached to this outline

**DUTY:** DESIGN A PROGRESSIVE DIE  
**TASK:** Develop Bolt & Dowel Construction

**PERFORMANCE OBJECTIVE:**  
Student will design a bolt & dowel pattern that will position and retain the die components in an assembly. All parts must be accurately positioned securely held in position and must be easily assembled and disassembled and must be fool proof.

**LEARNING ACTIVITIES:**  
1) Read "Basic Diemaking" Chapter 4  
2) Read "Die Design Fundamentals" Section 16  
3) Read "Advanced Diemaking" Review 5, 6, 7

**DUTY:** DESIGN A PROGRESSIVE DIE  
**TASK:** Make A Bill Of Materials

**PERFORMANCE OBJECTIVE:**  
Student will make a bill of materials listing all the parts to be made and the parts that are to be purchased including all necessary information.

**LEARNING ACTIVITIES:**  
1) Read "Die Design Fundamentals" Section 19

**DUTY:** MAKE A PROGRESSIVE DIE  
**TASK:** Machine All Parts Of A Progressive Die

**PERFORMANCE OBJECTIVE:**

Student will select the materials required and machine the components parts of the die previously designed, all sizes and hardness are to be determined by the student.

**LEARNING ACTIVITIES:**

- 1) Read "Advanced Diemaking" Chapters 5, 6, 7
- 2) Use reference books for cutting clearance and hardness

**DUTY:** MAKE A PROGRESSIVE DIE

**TASK:** Assemble A Progressive Die

**PERFORMANCE OBJECTIVE:**

Student will assemble the die components made previously, all components must be located and retained as specified in Chapters 5, 6, 7 of "Advanced Diemaking".

**LEARNING ACTIVITIES:**

- 1) Read "Advanced Diemaking" Chapters 5, 6, 7

**DUTY:** MAKE A PROGRESSIVE DIE

**TASK:** Check Assembled Die

**PERFORMANCE OBJECTIVE:**

Student will check out the die previously made and assembled to be sure that there is no interference and it is properly aligned. The die should be mounted in the try out press and run with a cardboard strip.

**LEARNING ACTIVITIES:**

- 1) See Instructor

**DUTY:** MAKE A PROGRESSIVE DIE

**TASK:** Run A Die To Produce Parts

**PERFORMANCE OBJECTIVE:**

Student will setup the die in a punch press and produce a minimum of 25 piece parts.

**LEARNING ACTIVITIES:**

- 1) Read "Advanced Diemaking" Chapter 1
- 2) See Instructor

**NOTE:** Ask questions, do not assume anything. Be safe!