

**NORTHEASTERN TECHNICAL COLLEGE  
COURSE OUTLINE**

<b>COURSE:</b> MTT	<b>PREFIX NO.</b> 147	<b>EFFECTIVE DATE</b> SPRING 2007	<b>NEXT REVIEW DATE</b> SPRING 2008		
<b>TITLE:</b> TOOL AND CUTTER GRINDING		<b>CREDITS</b> 2	<b>CONTACTS</b>		
			<b>CLASS</b>	<b>LAB</b>	<b>TOTAL</b>
			2	0	2

**PREREQUISITES:** None

**DESCRIPTION:**

Level I: This course covers theoretical and practical training in cutting tools, cutting tool angles, and the mechanics of material removal, and the operations of tool and cutter grinding equipment.

Level II: This course will cover the setup and operation of the tool and cutter grinder for various cutting tools.

**TEXTBOOK(S) OR ALTERNATIVE:**

Machining Fundamentals, John R. Walker

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

Safety glasses

**COLLATERAL READING:**

Tool Room Grinding - Norton

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

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.

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).

**DEPARTMENT RULES:**

1. The student must attend 90% of classes. The student will be dropped from the class after the 10% has been reached. Three tardies constitutes one absence. If you are late more than 15 minutes it will be counted as one absence.
2. Lab clean-up date will be announced each semester. All students have to attend or receive an "I" grade.
3. Daily lab clean-up and machine tool repair are course requirements.

DEPARTMENT RULES: (Continued)

4. There is no extra credit given for lab clean-up or machine tool repair or additional work.
5. Cheating is not permitted; if caught you will be dropped from the course.
6. Dress must be appropriate for machine tool work and not for sports events. If dress is not appropriate the student will not be allowed to work in the lab and will be marked absent. **(No Shorts, open-toed shoes, or baggy pants!!)**
7. Eye safety glasses are to be worn at all times in the lab. The student will be warned twice about the wearing of the glasses on the 3<sup>rd</sup> time will be asked to leave the class and will be marked absent that day and every day that he or she is told about the glasses.
8. Students must wear student ID at all times when on campus.

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

Lab Machines and Handouts

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

- WEEK 1: Off Hand Grinding  
Pages 183 to 190
- WEEKS 2&3: Precision Grinding  
Pages 353 to 382
- WEEK 4: Twist Drills  
Pages 158 to 162 and 170 to 173
- WEEKS 5&6: Lathe Cutting Tools  
Pages 211 to 219
- WEEKS 7&8: End Mills and Milling Cutters  
Pages 293 to 303
- WEEKS 9-15: Grinding tools in the lab.

**LAB PROJECTS:** Grind nine (9) different lathe form tools;  
(1) round nose turning tools

(2) left hand turning tool

(3) right hand turning tool

(4) left hand facing tool

(5) right hand facing tool

**LAB PROJECTS:** (Continued)

- (6) left hand roughing tool
- (7) right hand roughing tool
- (8) 1/8 inch necking tool
- (9) 1/4 inch necking tool
- (10) required three twist drills
- (11) regrind two fluted end mills and four fluted end mills

**OBJECTIVES OF COURSE:**

1. The student will demonstrate the ability to safely remove and replace grinding wheels.
2. The student will demonstrate the ability to identify types of wheels for each operation.
3. The student will demonstrate the ability to understand set up operation of various grinding machines.
4. The student will demonstrate the ability to sharpen various tools, drills, and milling cutters.
5. Projects (milling cutters, lathe cutting tools and drills) will be sharpened for instructor evaluation.

**INSTRUCTIONAL METHODS TO COMPLETE OBJECTIVES:**

Lecture  
Machine Demonstrations  
Hands on experience in lab

**EVALUATIVE METHODS TO APPRAISE OBJECTIVES:**

There will be a test on every subject covered from the text. Make-up test will be given in the Success Center at the convenience of the instructor. The test will cover the same content but will be different questions. If test is not taken on test day, 25 points will be deducted from the grade of the test taken late unless prior arrangements have been made with the instructor.

**GRADING:**

100 - 93	= A	33 1/3% Practical
92 - 85	= B	33 1/3% Test
84 - 77	= C	33 1/3% Final Exam
76 - 69	= D	
68 - BELOW	= F	