

**NORTHEASTERN TECHNICAL COLLEGE
COURSE OUTLINE**

COURSE:	PREFIX NO.	EFFECTIVE DATE	NEXT REVIEW DATE		
MTT	251	SPRING 2010	SPRING 2012		
TITLE	CREDITS	CONTACTS			
		CLASS	LAB	TOTAL	
CNC OPERATIONS	3	2	3	3	

PREREQUISITES: EGT 111, MAT 168 AND MTT 124

DESCRIPTION: This course is a study of CNC machine controls, setting tools, and machine limits, and capabilities.

TEXTBOOK(S) OR ALTERNATIVE: License: Academic Machine Course Suite, Learnhass, Oxygen Ed.

MATERIALS (specifying those to be purchased by student): Approved Safety glasses

COLLATERAL READING: Machine Manuals

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

Attendance: The student is required by the instructor to attend 90% of the classes. Excessive absences will result in the student being dropped from the course.

Tardies: Three tardies will constitute one absence.

Projects: Projects will be graded on appearance and tolerance.

Tests: Tests and pop quizzes will be given.

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 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)

Student ID: It is mandatory that every student wear his or her

student ID at all times. During the first week of classes, the instructor will issue a reminder to wear the ID. This reminder is a warning. After the first week of classes, instructors are required to dismiss students without ID from class. The student may get his/her ID (or a new one in Student Services for \$3.00) 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.

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.

Week 1: Coordinate systems

Weeks 2-5: Standard Machine codes

Weeks 6-15: Programming along with demonstrations

OBJECTIVES/STUDENT LEARNING OUTCOMES OF COURSE:

1. The student will demonstrate the ability to identify the axis of a lathe and the axes of a milling machine.
2. The student will demonstrate the ability to describe points on the rectangular coordinate system.
3. The student will demonstrate the ability to determine the codes necessary for CNC machines to function.
4. The student will demonstrate the ability to identify the function of certain machine controls.
5. The student will demonstrate the ability to set zero points on two and three axes machines.
6. The student will demonstrate the ability to set tool offsets.
7. The student will demonstrate the ability to set reference points and work offsets.
8. The student will demonstrate the ability to write CNC programs.
9. The student will demonstrate the ability to load programs into the CNC machines.

INSTRUCTIONAL METHODS TO COMPLETE STUDENT OBJECTIVES:

Lecture
Machine Demonstrations
Hands on experience in lab

EVALUATIVE METHODS TO APPRAISE STUDENT OBJECTIVES:

Written tests will be given. Test average will account for 60% of final grade.

Projects will count 20% of the final grade. A final exam will be given and will account for 20% of the final grade. The exam will count for 40% of the final grade if no projects are made.

GRADING SCALE:

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

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 class 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. Avoids class clean-up and/or has a negative attitude.