

## MECHANICAL ENGINEERING PROGRAM

### ABET COURSE SYLLABUS

#### ME 230: Principles of CNC (1 credit): Elective Course

##### Course Description (2008-2010 Catalog):

Includes the programming, setup, and use of Computer Numerically Controlled (CNC) machines. Students will learn the “G-code” programming language in addition to descriptions of the tools, equipment, and procedures special to this type of machines.

##### Prerequisite Course: ME 130

##### Prerequisite by Topic:

- Machine shop practices

##### Textbook: None

**Other Reference Material:** Operations and programming manuals for provided machines

**Course Coordinator:** Kevin Nelson, Professional Staff

##### Course learning outcomes:

- Turn on and operate the machines manually.
- Perform basic setup procedures including fixturing, zeroing, and tool offsets.
- Create, transfer, edit, and troubleshoot programs written for each machine.

##### Relationship of Course to Mechanical Engineering Program Educational Outcomes:

Goal 1: Provide mechanical engineering graduates with technical capabilities.					Goal 2: Prepare the mechanical engineering graduates to have effective workplace skills.				Goal 3: Instilling a sense of responsibility as a professional member of society.			
1.a	1.b	1.c	1.d	1.e	2.a	2.b	2.c	2.d	3.a	3.b	3.c	3.d
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##### Topics Covered:

1. CNC mill controls
2. CNC mill programming and file transfer

3. CNC mill fixturing and setup
4. CNC lathe controls
5. CNC lathe programming and file transfer
6. CNC lathe fixturing and setupSystem response (transient)

**Laboratory Projects:**

1. Mill project
2. Lathe project
3. Final project

**Class/Laboratory Schedule:** 75 minutes laboratory, one session per week

**Assessment of Student Progress toward Course Objectives**

Two mid-term projects, and final project

**Class/Laboratory Schedule:** R 8:30-9:45 AM (Spring Semester)

**Contribution of Course for meeting Professional Component:**

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|--|-----------|
| (a) Mathematics and basic sciences:      | 0 credit  |
| (b) Engineering Topics (Design/Science): | 0 credit  |
| (c) General Education:                   | 0 credit  |
| (d) Others:                              | 0 credits |

**Prepared By:**

Kevin Nelson

**Date:**

October 2, 2009