REGULAR COURSE SYLLABUS

School of Professional Studies

Department: Engineering Technology Studies

Semester(s) Offered: Spring and Fall

Prefix & Course Number: MET 3100  Crosslisted With*: _____

Course Title: N/C Computer Programming

Credit Hours: 3 (2+2)

Contact Hours: Lecture 30  Lab 30  Internship _____  Practicum _____

Schedule Type(s): B  Grading Mode(s): L

Repeat* (Variable topics): _____

*( Pertinent only if the course can be repeated; enter maximum number of hours that can be earned by taking this course.)

Restrictions (Variable Topics Course): None

Prerequisite(s): MET 1010, MET 1210, and MTH 1120, with a grade of "C" or better

Corequisite(s): None

Prerequisite(s) or Corequisite(s): _____

Banner Enforced:

Prerequisite(s): MET 1010, MET 1210, and MTH 1120, with a grade of "C" or better

Corequisite(s): None

Prerequisite(s) or Corequisite(s): _____

Catalog Course Description:

The theory is reviewed to control machines numerically. Algorithms are developed to program NC machines. N C language and programming emphasizes APT, Compact II and suitable post-processors. The lab work includes operation of machines to demonstrate the programming skills.

Required Reading and Other Materials will be equivalent to (Title, Author, Publisher, Copyright Date):


APPROVED:

Department Chair/Institute Director

[Signature] [Date 8/10/05]

Dean

[Signature] [Date 9/23/05]

Associate VP, Academic Affairs

[Signature] [Date]

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 3100

SPECIFIC (MEASURABLE) STUDENT BEHAVIORAL LEARNING OBJECTIVES:

Upon completion of this course the student should be able to demonstrate:
1. Program an N/C machine for numerical control (NC) manufacturing.
2. Operate NC manufacturing equipment.
3. Operate the machine in point-to-point, two dimensional, and three dimensional configurations.
4. Prepare numerical control tapes and program the machine to make a part.
5. Apply various software to N/C equipment.
6. Make various N/C applications using small computers and special languages.
7. Understand N/C machining processes and determine tooling requirements.

OUTLINE OF COURSE CONTENT (Major Topics and Subtopics):
I. Basic Approaches to Numerical Control
   A. Principles of Numerical Control
   B. Software: Cards and Tape
II. Manual Programming Method
   A. Programming in Two Axis
   B. Controlling Operations - Basic Principles
   C. Operations in Three Axis
   D. The Hardware of Numerical Control
III. Applications of Numerical Control
   A. Computer Programming of N/C Tapes
   B. Pros and Cons of N/C in the Shop
   C. Small Computers and Special Languages
IV. Tooling for Numerical Control Machining
   A. Tool Design
   B. Processing Changes

EVALUATION OF STUDENT PERFORMANCE:

Homework
Test
Lab Report and Special Projects