REGULAR COURSE SYLLABUS

School of Professional Studies

Department: Engineering Technology Studies

Semester(s) Offered: Spring/Fall

Prefix & Course Number: MET 1010   Crosslisted With*: ___

Course Title: Manufacturing Processes

Credit Hours: 3 (2+2)

Contact Hours: Lecture 30   Lab 30   Internship ____   Practicum ____

Schedule Type(s): L   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): NONE

Corequisite(s): NONE

Prerequisite(s) or Corequisite(s): NONE

Banner Enforced:
   Prerequisite(s): NONE
   Corequisite(s): NONE
   Prerequisite(s) or Corequisite(s): NONE

Catalog Course Description:

Basic fundamentals in the operation of machine tools are studied, including measuring tools, benchwork and layout, and tool grinding. The student performs various machine operations using the engine lathe, milling machine, vertical drills, and surface grinders.

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


APPROVED:

Department Chair/Institute Director

Kathy Styl

Date 8/10/05

Dean

Anita F. Curran

Date 9/23/05

Associate VP, Academic Affairs

Date

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 1010

**Specific (Measurable) Student Behavioral Learning Objectives:**
Upon completion of this course the student should be able to:
1. Analyze and determine material fabrication processes.
2. Use laboratory instrument doing routine metrological measurements.
3. Operate regular machine shop equipment such as grinders, drill presses, lathes, milling machines, shapers, and planers.
4. Recognize engine machine tool requirements and be selective in the choice of tools.
5. Setup and operate machines, index and determine machine speeds, feeds, and depth requirements.
6. Identify with numerical control machining and computer programming.
7. Determine costs and establish basic programs in machine shop economics.

**Detailed Outline of Course Content** (Major Topics and Subtopics):
I. Introduction to Materials Fabrication  
   A. Measuring Tools  
   B. Bench Tools and Layout  
II. Drill Press  
   A. Types and Operation  
   B. Tools and Holding Devices  
   C. Seeds and Feeds  
III. Engine Lathe  
   A. Types and Operation  
   B. Cutting Tools and Accessories  
   C. Speeds and Feeds  
IV. Milling Machines  
   A. Types and Operation  
   B. Tools and Accessories  
   C. Indexing and Set ups  
   D. Speeds, Feeds, and Depth of Cut  
V. Shaper  
   A. Types and Operation  
   B. Cutting Tools and Holding Devices  
   C. Traverse and Feed  
VI. Planer  
   A. Types and Operation  
   B. Cutting Tools and Accessories  
   C. Feeds, Speeds, and Depth of Cut  
VII. Grinding Machine  
   A. Types  
   B. Grinding Principles and Practice  
VIII. N.C. Machine and Demonstration of Computer Programming  
IX. Metal Cutting Economics – Computer Program

**Evaluation Of Student Performance:**
Homework, test and other projects, Lab reports, and projects.