REGULAR COURSE SYLLABUS

School of Professional Studies

Department: Engineering Technology Studies

Semester(s) Offered: Spring

Prefix & Course Number: MET 3000 Crosslisted With*: ____

Course Title: Manufacturing Analysis

Credit Hours: 4 (4+0)

Contact Hours: Lecture 60 Lab 0 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): MET 1010, MET 1310, MTH 1110 or MTH1400, all with a grade of “C” or better

Corequisite(s): NONE

Prerequisite(s) or Corequisite(s): NONE

Banner Enforced:

Prerequisite(s): MET 1010, MET 1310, MTH 1110 or MTH1400, all with a grade of “C” or better

Corequisite(s): NONE

Prerequisite(s) or Corequisite(s): NONE

Catalog Course Description:

This course introduces the organizational and functional requirements for effective production. Tolerance charts and work piece control are used to plan the manufacturing sequence, select the preferred manufacturing equipment and the operational sequence.

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


APPROVED:

Department Chair/Institute Director

Date 8/10/05

Dean

Date 9/23/05

Associate VP, Academic Affairs

Date

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 3000

**SPECIFIC (MEASURABLE) STUDENT BEHAVIORAL LEARNING OBJECTIVES:**

Upon completion of this course the student should be able to demonstrate:

1. Plan production systems, including forecasts, resource allocation, and scheduling.
2. Analyze production systems in terms of labor needs, layout, job sequencing, and materials requirements.
3. Control production systems in terms of progress charts, quality control, and productivity measurements.
4. Economic analyses to establish production quantity requirements and break-even points.
5. Establish production flow analogy through PERT and similar control techniques.
7. Conduct person/machine work studies to establish person/machine charts.
8. Maintain material controls to coordinate productivity, inventory and quality control.

**OUTLINE OF COURSE CONTENT** (Major Topics and Subtopics):

I. Product Cycles
   A. Research and Development
   B. Production Functions

II. Forecasting Techniques
   A. Time Series
   B. Correlation Studies

III. Economic Analysis
   A. Break-Even Analysis
   B. Replacement Analysis
   C. Life Cycle Analysis
   D. Sensitivity Analysis

IV. Allocation of Resources
   A. Graphic Method
   B. Transportation Method

V. Network Scheduling

VI. Human Factors
   A. Capacities and Limitations
   B. Fault Free Analysis

VII. Layout
   A. Site Location
   B. Work Place Design

VIII. Manufacturing Sequencing
   A. Line Balancing
   B. Machine Loading
   C. Maintenance

IX. Materials Control
   A. Purchasing
   B. Inventory Models

X. Quality Control - Overview

XI. Productivity - Studies

**EVALUATION OF STUDENT PERFORMANCE:**

30% Quizzes
30% Exams
40% Homework, including quantitative problems and case histories (oral and written).