REGULAR COURSE SYLLABUS

School of:  Professional Studies

Department:  Engineering Technology

Prefix & Course Number:  MET 4080  Crosslisted With*:  

Course Title:  Computer Aided Manufacturing

Banner course title (28 characters):  Computer Aided Manufacturing

Check All That Apply:  

Required for Major:  

Required for Minor:  

Specified Elective:  

Required for Concentration:  X  Elective:  X  Service Course:  

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

**Federal Credit Hour Definition:** A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or
2. At least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward the award of credit hours. 34CFR 600.2 (11/1/2010)

Credit Hours: 3 (2+2)

Face-to-Face or Equivalent Hours per course:

Lecture 30  Lab 30  Internship  

Practicum  Other (please specify type and hours):  

Additional Student Work Hours per course: 90

Schedule Type:  B  Grade Mode:  L  

Variable topics umbrella course:  No X Yes  If Yes, number of credit hours allowed  

Specified repeatable course:  No  X Yes  

APPROVED:

[Signature]  01/29/2014  
Department Chair OR Program Director  

[Signature]  03/12/14  
Dean OR Associate Dean  

[Signature]  03/13/14  
Associate VP, Academic and Student Affairs  

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 4080

**Prerequisite(s):** MET 3000, MET 3100, and (MET 3210 or EET 2350), with a grades of "C" or better

**Corequisite(s):**

**Prerequisite(s) or Corequisite(s):**

**Banner Enforced:**

**Prerequisite(s):** MET 3000, MET 3100, and (MET 3210 or EET 2350), with a grades of "C" or better

**Corequisite(s):**

**Prerequisite(s) or Corequisite(s):**

**Registration restrictions:** Level____ Class____ Program/Major____ Student attribute____

**Catalog Course Description:**
This is an advanced computer aided manufacturing course. The course introduces computer applications for manufacturing applications, configuration control, purchasing, vendor ratings, production control, inventor control and final product acceptance documentation are studied. Appropriate computer and machining software will be used.

**Specific Variable Topics Course Description (if applicable, umbrella course description included above):**

**Required Reading and Other Materials will be equivalent to:**
Cam instructor (2012) “Mastercam X6 Training Guide - Mill 2D&3D/Lathe Combo” CAMINSTRUCTOR.

**Specific, Measurable Student Behavioral Learning Objectives:**
Upon completion of this course the student should be able to:
1. Examine modern manufacturing techniques.
2. Maintain management control over manufacturing functions such as schedules, purchasing, production control and inspection documentation.
3. Create engineering drawing control changes and storage using computer software.
4. Create effective decisions and assume a management role in Production/Operations Management.
5. Apply analytical methods and system concepts to production operations.
6. Apply PERT in critical path scheduling.
7. Examine techniques to determine shop loads and schedules.
8. Computerize production planning, scheduling and control systems using SMARTCAM.

**Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/Internship (experience, responsibilities and supervision):**

**Course outline:**

I. Introduction
   A. Role of Production/Operations Management
   B. Decision Making in Production/Operations Management

II. Analytical Methods
   A. System Concepts
   B. Analytical Methods in Production/Operations Management
Prefix and Course Number: MET 4080

III. Operations Planning and Control
   A. Inventories in the System
   B. Industrial Planning, Scheduling, and Control
   C. Work Shift Scheduling

IV. PERT Planning Methods
   A. Node Numbering
   B. Critical Path Scheduling

V. Shop Loading and Scheduling

VI. Computerized Planning Scheduling and Control Systems

VII. Maintaining System Reliability
   A. Control of Quality
   B. Acceptance Sampling

VIII. Preventative Maintenance

Evaluation of Student Performance:
1. Quizzes
2. Homework
3. Examinations
4. Lab Projects