REGULAR COURSE SYLLABUS

School of Professional Studies

Department: Engineering Technology Studies

Semester(s) Offered: Spring

Prefix & Course Number: MET 3410  Crosslisted With*: ___

Course Title: Geometric Dimensioning and Tolerancing

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 1210 and MET 1310 with grades of “C” or better

Corequisite(s): NONE

Prerequisite(s) or Corequisite(s): NONE

Banner Enforced:

Prerequisite(s): MET 1210 and MET 1310 with grades of “C” or better
Corequisite(s): NONE
Prerequisite(s) or Corequisite(s): NONE

Catalog Course Description:
Dimensioning practices as defined by ASME National Standards (Y14.5M-1994) are studied. Tolerance of form, tolerances of positions, datums, concentricity, symmetry and functional gaging concepts are also treated to produce low-cost and high-quality products.

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

APPROVED:

Department Chair/Institute Director

Kathy Zieg

Dean

Date

Date

Associate VP, Academic Affairs

Date

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 3410

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

Upon completion of this course the student should be able to:
1. Obtain a working knowledge of the dimensional methods used on product drawings by all US Government design agencies and by the majority of metal working companies throughout the United States and Europe.
2. Gain experience in designing functional gages for use in inspecting mechanical piece parts.
3. Develop an appreciation for the economical advantages of using geometric dimensioning and tolerancing concepts on product design drawings.
4. Relate form tolerances to geometric designs using proper drafting techniques.
5. Relate, establish, and apply datums, concentricity, and symmetry rules to geometric dimensions and tolerances.
6. Apply gaging techniques as related to production tooling and design.
7. Adapt product design features to viable and alternative production techniques and manufacturing processes.

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

I. Tolerance of Form  
   A. Flatness  
   B. Straightness  
   C. Parallelism  
   D. Perpendicularity  
   E. Angularity  
   F. Roundness, Cylindricity and unout  
   G. Profile Tolerancing  

II. Tolerance of Position  
   A. True Position Theory  
   B. MMC and RFS  

III. Datums  
   A. Establishing Datums  
   B. Datum Application  

IV. Concentricity  

V. Symmetry  

VI. Functional Gage Design (MMC)  

VII. Product Features, Size, Gage Design, and Tooling Analysis

**EVALUATION OF STUDENT PERFORMANCE:**

30% Examinations;  
25% Design Drawings/Projects;  
25% Lab Reports (written and oral);  
20% Final Examination.