MURRAY STATE UNIVERSITY

DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY

COURSE NUMBER: ITD 333 CREDIT HOURS: 4.0

I. TITLE: ANSI Fundamentals for Mechanical Product Design

II. CATALOG DESCRIPTION:
The course focus is the intermediate technical fundamentals of ANSI standards applicable to mechanical product design and engineering graphics. Engineering sketching and 3-D parametric modeling will be emphasized. 3 hours lecture and 3
hours laboratory. Prerequisites: ITD 202, ITD 204, ITD 230/330.

III. PURPOSE:
The course is designed to introduce the theory and practice of ANSI standards for surface quality specification, mating part fits, geometric dimensioning and tolerancing, fixed and floating fastener tolerancing and tolerance stack-ups.

IV. COURSE OBJECTIVES:
As a result of taking this class students will:
- A. Apply concepts of concurrent engineering and functional design
- B. Apply their knowledge and skill in technical sketching and parametric modeling to the solution of product component and product assembly problems.
- C. Select and write basic surface quality control specifications
- D. Use the basic shaft and basic hole systems to select and write mating part fit specifications.
- E. Interpret, select and write intermediate level geometric dimension and tolerancing specifications.
- F. Differentiate and tolerance fixed and floating fastener tolerances for mating parts.
- G. Calculate basic tolerance stack ups for both coordinate tolerancing and GD&T tolerancing systems

V. CONTENT OUTLINE:
- A. Surface quality control specification
- B. Specifications for mechanical mating part fits for decimal inch & metric measuring systems
- C. Geometric dimensioning and tolerancing
- D. Fixed fastner and floating fastner mating part tolerancing
- E. Tolerancing stack-ups

VI. INSTRUCTIONAL ACTIVITIES:
- A. Lectures/discussions
- B. Demonstrations
- C. Group and individualized instruction
- D. Laboratory drawing
  1. Tolerance calculations
  2. Applied problems solved by sketching 2D CAD and/or parametric modeling

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:
None

VIII. RESOURCES:
Industrial product examples and drawings will be used to emulate industrial practice.

IX. GRADING PROCEDURES:

Daily assignments	40%
Performance exams (4 @ 5%)	20%
Mid-term exam	10%
Final exam	20%
Class participation	10%

Grading Scale:	Greater than 92	= A
	84-91	= B
	76-83	= C
	68-75	= D
	Less than 67	= E

X. ATTENDANCE POLICY:
This course will adhere to the policy published in the current MSU Undergraduate Bulletin. Each student is expected to be prompt and regular in class attendance. For excused absences, (excused absences are: doctor's note for illness, death in family and MSU academic or athletic sponsored participation) the student must make arrangements with the instructor beforehand or make-up work or exams WILL NOT be provided/accepted. With the third unexcused the student's grade will be decreased by one letter grade and further absences will result in a drop of one-half letter grade each. For the purposes of attendance, three tardies equal one absence. Attendance is recorded at the beginning and sometimes at the end of each class period.

XI. ACADEMIC HONESTY POLICY:
This course will adhere to the policy published in the current MSU Undergraduate Bulletin. Cheating, plagiarism (submitting another person's material as one's own), or doing work for another person which will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks or other sources in order to secure or give help during an examination; the unauthorized copying of examinations, assignments, reports or term papers; or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

XII. TEXT AND REFERENCES:
A. Bertoline, Wiebe, Hartman, and Ross. Technical Graphics Communication, 4th Edition, © 2009.
B. Krulikowski. Fundamentals of Geometric Dimensioning & Tolerancing, or Wilson. Design Dimensioning and Tolerancing. (Decision waiting on actual publication dates of materials…)
C. Krulikowski. The Ulitmate Pocket Guide: GD&T, 2nd Ed. © 2009.

XIII. PREREQUISITES:

XIV. Syllabus Statement of Equal Opportunity:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or other provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities.

B. Siebold, 1/11