DE ANZA COLLEGE -
BUSINESS/COMPUTER SYSTEMS DIVISION
DESIGN AND MANUFACTURING TECHNOLOGIES DEPARTMENT
GREEN SHEET FOR Winter 2025

Course: DMT 52 Geometric Dimensioning and Tolerancing: CAD Applications
Course Number: DMT D052.63Z (Online) CRN: 33807
Instructor: Mr. Robert Benzio
Office Phone: (408) 203-0457 (cell) E-mail: benziorobert@fhda.edu
Office Hours: Mondays Rm. E35 5:00 pm – 6:00 pm
Online through Canvas, email, Also you can schedule Phone and Conference through zoom.

Class: Lecture Mondays, 6:00 pm – 6:50 pm live lecture through zoom Rm. Online/recording
Lab Rm. online

Text & Reference: Geometric Dimensioning and Tolerancing **10th Edition** By: David A. Madsen and David P. Madsen, Dennis A. Schwartz

Overview: 3:40 hour's lecture/laboratory per week.

- Fundamentals of Geometric dimensioning and tolerancing.
- Compare and contrast the coordinate and geometric dimensioning and tolerancing system.
- Identify and interpret the geometric dimensioning and tolerancing symbols.
- Interpret and construct feature control frames.
- Explain the use of datums.
- Describe the characteristics and conditions for non-position feature tolerances.
- Determine the appropriate use of symbols for indicating position tolerances.
- Compare contrast the ANSI Y14.5M and ISO symbols.

Student Learning Outcome: This course is to educate and assist students, designers, engineers, and professionals in the fundamental use of GD&T through a series of CAD design work, print reading exercises and homework. The hands on work shall include:

- Numerous activities to create parts and 2-D drawings of the parts.

The document, generated from CAD files will be submitted digitally.

- The native CAD file and a PDF file of the drawing CAD file.
- Completed test and print reading forms that are submitted.
- Other files/documents if asked by your instructors.

Attendance: Attendance at all classes is expected. While the student's attendance record is not part of his/her grade, the work load is designed to make **full** use of the hours allocated for this class. That is to say, if a student doesn't put 4 hours of work per week on the subject matter, he/she cannot expect to finish the assigned work by the end of the quarter. Attendance maybe taken once every session. **It is the student's complete responsibility to drop this class. I am required to drop anyone from the class if they have not attended class or did not complete work during the Censes period (The Censes drop is a mandate from the college and State of CA).**

Ways you will hear from Me are:

I will be holding a live lecture for each class. This lecture will be presented over zoom and live in person simultaneously at the scheduled time of my in-class session. At this time, I will also be fielding questions not just from the classroom but from those online that are in attendance. After the lecture the recording of the lecture will be postprocessed and uploaded to the link provided on canvas in the class canvas shell.

As for feedback on drawings, I will be submitting the feedback in the comment section of the assignment depending on the complexity you may receive a simple written statement, audio recording, or a video demonstrating what is wrong and what you should have done

different. Due to work outside of my teaching I try to respond within 72 hours but sometimes that is not always feasible so I will try to keep it to the 72 as best I can.

Periodically through the quarter I will send messages through the announcements in canvas reminding people of work that needs to be turned in if I see that a lot of students are falling behind. Also, in the announcements if there is any important dates like holidays or if class is cancelled for the day it will be posted there as well. So, it is your responsibility as students to periodically check the announcements and/or email that you used to register for this class.

I will also contact students privately in emails if they are falling behind and request that they show up for in zoom meeting to discuss any issues that they might be having.

Homework: Our textbook is also a workbook and much of the work to be done is included in the textbook. We will also create new simple drawings from handouts provided in class. The drawings may be created in any of the CAD software or with drafting tools on paper. Lab time will be provided and the student may use any software or hardware to complete the assignment.

Grading: The student's grade for this course is based upon the submittal of the Chapter tests, print readings, drawings and final examination.

1. Accuracy; Is the data required correct?
2. Clarity; No confusing or unnecessary data.
3. Completeness; Are all necessary features and/or dimensions present?

Basis for Grade: Chapter Tests, and Print Reading Exercises: 40%
Drawings: 30%
Final Exam: 30%

100-97%	A+
96-93%	A
92-90%	A-
89-85%	B+
84-80%	B
79-76%	B-
75-72%	C+
71-68%	C
67-61%	D+ The College doesn't allow for a C-
60-57%	D
56-53%	D-
< 53%	F. All exams must be taken to receive a passing grade.

College Resources and Information

- Resources On Campus: Tutorial, EOPS, Counseling, etc…
- Classroom Conduct: Academic Integrity. **Check the college website at:** https://www.deanza.edu/policies/academic_integrity.html
- Mutual Respect Policy
- Student Grievance Procedure
- Student Rights & Responsibilities
- **CARES Emergency Care Funds:** https://www.deanza.edu/resources/emergency-funds.html
- **Students with special :** http://www.deanza.edu/dsps/index.html

I. Catalog Information

DMT 52 Geometric Dimensioning and Tolerancing: CAD Applications 2 Unit(s)

Advisory: EWRT 200 and READ 200, or ESL 261, 262 and 263.
Lec Hrs: 12.00
Lab Hrs: 36.00
Out of Class Hrs: 24.00
Total Student Learning Hrs: 72.00
This course will focus on geometric dimensioning and tolerancing, utilizing ASME Y14.5M-2018 standards as they apply to engineering and manufacturing drawings. CAD drawings will be completed from solid models using multiple datums, symbols, feature control frames, and other GD&T specifications.

Student Learning Outcome Statements (SLO)

Create a document package containing components modeled using CAD design tools in accordance with ASME standards and engineering drawings compliant with ASME Y14.5.

II. Course Objectives

A. Explain the dimensioning and tolerancing concepts and industry practices
B. Identify and interpret standard symbols.
C. Analyze the characteristics and standard practices of dimensioning using feature control frames.
D. Demonstrate tolerancing and specifications.
E. Apply datums to engineering design.
F. Illustrate and identify mating parts requirements and specifications.
G. Analyze and input geometric non-position features.

III. Essential Student Materials

None

IV. Essential College Facilities

CAD computer laboratory

V. Expanded Description: Content and Form

A. Explain the dimensioning and tolerancing concepts and industry practices
1. History.
2. Coordinate systems.
3. Y14.5M standards.
4. ISO standards.
B. Identify and interpret standard symbols.
1. Feature control frames.
2. Size.
3. Coordinate.
4. Geometric Y14.5 and ISO symbols.
C. Analyze the characteristics and standard practices of dimensioning using feature control frames.
1. Size.
2. Position.
3. Datums.
4. Features.
D. Demonstrate tolerancing and specifications.
1. Size.
2. Position.
3. Non-position features.
4. Maximum material condition.
5. Regardless of feature size.
6. Least material condition.
7. Use an application of symbols.
E. Apply datums to engineering design.
1. Use.
2. Primary.
3. Secondary.
4. Tertiary.
F. Illustrate and identify mating parts requirements and specifications.
1. Control of features.

2. Limits.
3. Tolerances.
G. Analyze and input geometric non-position features.
1. Flatness.
2. Straightness.
3. Circularity.
4. Cylindricity.
5. Perpendicularity.
6. Angularity.
7. Parallelism.
8. Profile.
9. Run out.

VI. Assignments

A. Reading from GD&T textbook and references.
B. Workbook assignments from GD&T text.
C. Laboratory assignments requiring students to show understanding of GD&T using CAD models and engineering drawings.

VII. Methods of Instruction

Lecture and visual aids
Discussion of assigned reading
Discussion and problem solving performed in class
Quiz and examination review performed in class
Homework and extended projects
Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises

VIII. Methods of Evaluating Objectives

A. Quizzes to evaluate correctness and proper use of GD&T symbols and concepts as well as application of industry standards.
B. Completion and correctness of text book worksheets demonstrating understanding of GD&T and ISO standards.
C. Midterm and final exam, including modeling and drawing components, that require students to apply concepts examined through the course as stated in the evaluation rubric.

IX. Texts and Supporting References

A. Examples of Primary Texts and References
1. Madsen, David. "Geometric Dimensioning and Tolerancing." Ninth Edition Tinley Park Ill: Goodheart Willcox, 2013.
B. Examples of Supporting Texts and References
1. None

X. Lab Topics

A. Applying Datums
B. Dimensioning
C. Position Tolerancing
D. Features
E. Use of Symbols