

Oklahoma State University Institute of Technology
Face-to-Face Common Syllabus
Fall 2017

ETDG 2293 – MECHANICAL DESIGN

This course focuses on the design of machine systems using the principles of mechanical design ergonomics, economics and production processes. Students increase their drafting and design competency through development of detail and assembly drawings and associated technical documents.

Course Purpose:

The purpose of this class is to learn design principles using 3D Computer Aided Drafting (CAD) using SolidWorks. This will be accomplished by designing parts, assemblies and drawings by using proven techniques.

Type of Course: Theory/Lab

Credit Hours: 3; Total clock hours of theory per semester: 30;

Total clock hours of lab per semester: 45; Total clock hours of clinical per semester: N/A.

Class Length: Full Semester

Class Days and Times: MWF 1:00 – 2:25PM CST

Prerequisites: ETDG 1253 & ETDG 2423

Instructor Name: Michael Freeman

Instructor Phone: (918) 293-5052

Office: DWRTC Room #115

Instructor email: michael.freeman@okstate.edu

Contact: My preferred method of contact is E-mail. Please allow 24-48 hours to return your correspondence during the normal work week.

Instructor's Office Hours: Classroom 150 MWF 11:25 – 11:45AM, TR 11:00 – 11:45AM and F 8:00-9:25AM CST

School Name: Engineering Technologies

School Main Phone: 918-293-5150

REQUIRED TEXT, REFERENCES, AND MATERIALS

Texts: *Modern Graphics Communication*, Giesecke, Prentice Hall, ISBN #0135151031

References: *Engineering Drawing and Design, 7th edition*, Jensen/Helsel/Short, from
Glencoe/McGraw Hill ISBN#9780073521510

Materials: Notebook, writing utensil, & data storage device

Uniform/Tools: N/A

Estimated Cost for Materials: \$60.00

Estimated Cost for Uniform/Tools: N/A

Optional Resources: N/A

Upon completion of the course, students should:

COURSE OBJECTIVES	ASSESSMENT OF COMPETENCY
*Calculate fits and tolerances.	Problems 19, 20 & 21 and Test #1
*Draw using fits and tolerances.	Problem 24 and Test #1
*Select the best fastener to use on the current project.	List of Questions and Test #2
*Create assemblies with BOM and callouts.	Assembly Project.
*Develop a GD&T feature control frame to meet project requirements based on industry standards.	Test #3
*Design parts using industry standard design criteria.	Connector Caster Frame
*Determine the material and forming process based on quantity needed and cost to manufacturing.	Final Project
Define the term gear and describe the four major families of gears.	Gear worksheet

Aspects of the course objective assessments may be used in the university's assessment of student learning. If applicable, an asterisk (*) above indicates this assignment is used in the university assessment program.

COURSE ACTIVITIES

In this course students will:

- Participate in class discussions and activities.
- Take examinations.
- May be required to do quizzes / in class assignments.

EVALUATION - GRADES WILL BE BASED ON THE QUALITY AND COMPLETION OF THESE TASKS:)

Projects/Assignments 70%
 *Problem 24
 *Assembly Project 10%
 *Final Project (2) 20%
 Unit Exams (3).....30%

OSUIT Grading Scale
A = 90% -100%
B = 80% -89%
C = 70% -79%
D = 60% -69%
F = 59% & below

*The student's grade for this assignment will be used in the university's assessment of student learning. A 70% competency or higher receives a Pass rating. This Pass/Fail rating is independent of the student's course grade.

Remember! All technical classes require a 70% or better for graduation.

Daily and/or weekly quizzes, small weekly assignments and similar type projects: Normal return time to student by next class meeting or no later than one (1) week.

Extensive assignments, large lab projects, extensive quizzes, exams and similar type projects: Normal return time to students in one (1) to two (2) weeks.

RECOMMENDED STUDENT COMPETENCIES/SKILLS

A good working knowledge of file management i.e. save files, create folders & keep track of assignments.

AUTHORIZED TOOLS

N/A

LATE WORK

All assignments will have specific due dates and are expected to be completed by that date. However, I know life gets in the way and grace may be given with a 10% penalty applied to the graded work. The student must contact me ASAP and work out a time to turn in the late work. If a test is missed it is up to the student to work out a time when it can be made up. The penalty will be the same as late work if done in an orderly manner.

TESTING

All quizzes and tests are to be completed independently; no collaboration with classmates is permitted and any instance of such will be considered academic dishonesty.

OTHER LAB AND CLASSROOM POLICIES

INSTRUCTOR'S POLICY ON ABSENCES

Class lectures will not be repeated. However, percentage point can be earned for perfect attendance i.e. 0 absences = 2%, 1 absence = 1%, 2 absences = 0.5% and 3 or more absences = 0%.

STUDENT CONDUCT

Students are expected to cooperate in maintaining a classroom environment conducive to learning. Courteous and respectful behavior will be expected from all students each day. All pagers, cellular phones, and CD and MP3 players should be turned off. The use of tobacco in any form in University buildings is prohibited.

INSTRUCTIONS FOR SPECIFIC TASKS AND ASSIGNMENTS

Drawing Projects:

A. Drawings will be evaluated according to the following:

1. Solution to problem
2. Following of instructions and completeness
3. Appearance, including neatness, spacing and uniformity
4. Placement of dimensions
5. Accuracy

- B. Class time will be allotted to work on drawing projects, but may not be enough to complete assignments. **The student will have to schedule time outside of class to work on assignments.**
- C. Work can be redone if a grade is not desirable but the markup has to be handed in with the corrections and the average of the two grades will be final grade.

ETD LAB RULES

1. **Video Games:** The playing of video games on division computers **at any time is prohibited.** Students found playing video games on division computers will not only be asked to cease playing the game, but also remove any unauthorized software from the computer or network drive.
2. **Music Files:** Downloading of music files from the Internet to **any media is prohibited.** In many cases, this is illegal and may result in liability for the university as well as the individual(s) involved. Listening to music in the computer labs is allowed only if **legal** copies of compact music discs are used. Students must use their own headphones when listening to music. Listening to music during class is at the discretion of the instructor and **at no time** will listening to music be allowed during class discussions or lectures.
3. **Movies:** Downloading and/or playing of movie files from the internet (or any other source) are **prohibited.** In many cases, this is illegal and may result in liability for the university as well as the individual(s) involved.
4. **Pornography:** Downloading and/or display of pornographic materials on division computers and equipment are **prohibited.** Any such material found by faculty or staff will be **immediately** deleted or removed. The use of vulgar or suggestive names for computer files or folders will not be tolerated. Any such material, if found by faculty or staff, will be immediately deleted.

Division computers and equipment are for **educational use only.** It is the intent of the faculty and staff of the ET division to display a positive and professional environment, including the atmosphere of the classroom. It reflects negatively on our division when guests see games, movies, or hear loud or offensive music permeating from our classrooms.

Note: An official copy of the syllabus will be posted on the Online Class Room site and any changes being made to the syllabus in the future will be on this official syllabus.

SYLLABUS ATTACHMENT

View the Syllabus Attachment, which contains other important information, by visiting http://osuit.edu/center/student_syllabus_information

It will also be in the Online Classroom (D2L/Brightspace) in the Content – Start Here.

COURSE SCHEDULE

DATE	Mechanical Design Topics
Wednesday, September 06, 2017	Introductions, Syllabus & Module 1 - <i>Prob. 19</i>
Friday, September 08, 2017	Module 1 - <i>Due</i> & Module 2 - <i>Prob. 20 & 21- Start</i>
Monday, September 11, 2017	Module 2
Wednesday, September 13, 2017	Module 2 - <i>Due</i> & Module 3 - <i>Start</i>
Friday, September 15, 2017	Module 3
Monday, September 18, 2017	Review & Module 3 - <i>Due</i>
Wednesday, September 20, 2017	Test #1
Friday, September 22, 2017	Module 4 - <i>Threads & Fasteners</i>
Monday, September 25, 2017	Module 4 - <i>Due 9/27</i>
Wednesday, September 27, 2017	Review & Module 5 - <i>Assembly Project - Start</i>
Friday, September 29, 2017	Test #2
Monday, October 02, 2017	Module 5
Wednesday, October 04, 2017	Module 5
Friday, October 06, 2017	Module 5
Monday, October 09, 2017	Module 6
Wednesday, October 11, 2017	Module 6 - <i>GD&T - Start</i>
Friday, October 13, 2017	Module 6
Monday, October 16, 2017	Module 6

Wednesday, October 18, 2017	Module 6
Friday, October 20, 2017	Module 6
Monday, October 23, 2017	Review & Module 6 - <i>Due</i> & Module 11 - <i>Start</i>
Wednesday, October 25, 2017	Test #3
Friday, October 27, 2017	Module 7 - <i>Materials Read</i> & Module 8 - <i>Forming Process - Start</i>
Monday, October 30, 2017	Module 8
Wednesday, November 01, 2017	Module 8
Friday, November 03, 2017	Module 8
Monday, November 06, 2017	Module 8
Wednesday, November 08, 2017	Module 8
Friday, November 10, 2017	Module 8
Monday, November 13, 2017	Module 8
Wednesday, November 15, 2017	Module 5
Friday, November 17, 2017	Module 5
Monday, November 20, 2017	Module 5 - <i>Due - No Late Accepted</i>
Wednesday, November 22, 2017	No Class Thanksgiving
Friday, November 24, 2017	No Class Thanksgiving
Monday, November 27, 2017	Module 9 - <i>Power Transmission</i>
Wednesday, November 29, 2017	Module 10 - <i>Design Concepts - Final Project</i>
Friday, December 01, 2017	Module 10
Monday, December 04, 2017	Module 10
Wednesday, December 06, 2017	Module 10
Friday, December 08, 2017	Module 10
Monday, December 11, 2017	Module 10
Wednesday, December 13, 2017	Module 10 - <i>Presentation</i> & Module 11 - <i>Due</i>
Friday, December 15, 2017	Catch up day if needed

Schedule is subject to change at instructor discretion.