



Welcome to EML1533 Class (Class #: 15482)

INTRODUCTION TO CAD FOR MECHANICAL ENGINEERS

2014 SPRING

3 Credits

Dr. Aylin YENİLMEZ GÜRKÖK

EML1533 Introduction to CAD for Mechanical Engineers



Office #: EC3236

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Phone: 305-348-....

Lecture Hours: Tuesday
11:00/1:45 p.m.

Office Hours: Tuesday 2.00-3.00 p.m.

Course web site :

http://aylin.gurkok.net/EML1533_Spring_2014_%2815842%29.htm

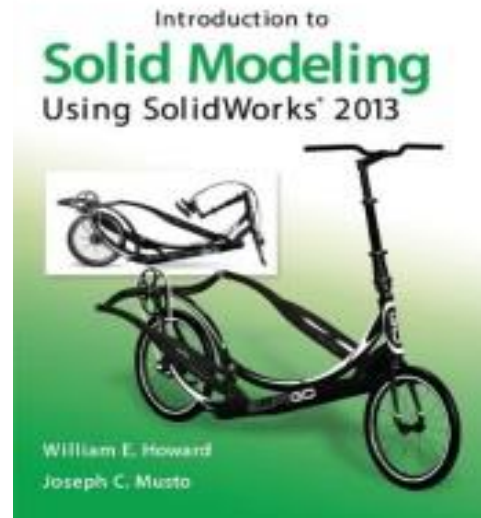
Course TA : Chunhui Chen
(cchen012@fiu.edu)

Office Hours: Wednesday 1.00-3.00 p.m.

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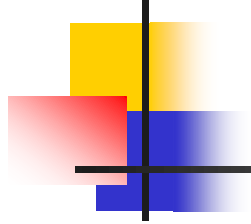
Text Book

- **Text Book** : William E. Howard and Joseph C. Musto, [Introduction to Solid Modeling Using SolidWorks® 2013](#), McGraw-Hill, 2012, ISBN-10: 0073375497, ISBN-13: 978-0073375496, Edition: 8



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Recommended Books



- [Gary Bertoline, Eric Wiebe, Nathan Hartman, William Ross, *Fundamentals of Graphics Communication*](#), McGraw-Hill Science/Engineering/Math; 6 edition (January 13, 2010), ISBN-10: 0073522635, ISBN-13: 978-0073522630
- [David C. Planchard, Marie P. Planchard, *SolidWorks 2011 Tutorial*](#), SDC Publications; Pap/Cdr edition (February 11, 2011), ISBN-10: 1585036315, ISBN-13: 978-1585036318
- Mark N Horenstein, [*Design Concepts for Engineers*](#), Prentice Hall; 4 edition (March 26, 2009), (ISBN-10: 013606955X, ISBN-13: 978-0136069553)
- [David L. Goetsch, William Chaulk, John Nelson, *Technical Drawing \(Drafting and Design\)*](#), Cengage Delmar Learning, 5th Edition, December 22, 2004 (ISBN-10: 1401857604, ISBN-13: 978-1401857608)
- Paul Tran CSWE, CSWI, [*SolidWorks 2013 Part I - Basic Tools*](#), SDC Publications; Pap/Cdr edition (November 12, 2012), ISBN-10: 1585037680, ISBN-13: 978-1585037681

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Objectives

This course of study aims;

- To introduce the fundamentals of technical graphical visualization and communication,
- To use software to create multi-view and 3-D drawings for mechanical engineering designs,

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Course Schedule

	Week of	Contents
1	Tuesday, January 7	Syllabus and Introduction Introduction to Computer Aided Drawing
2	Tuesday, January 14	Fundamentals of Technical Graphical Visualization and Communication, Parametric Design and Basic Drawing Functions
3	Tuesday, January 21	Part Modeling
4	Tuesday, January 28	Advanced Part Modeling
5	Tuesday, February 4	3-D modeling and Multi-view Drawings First Progress Report Submission
6	Tuesday, February 11	Part Drawings, Dimensioning and Tolerances , and Surface Finishing Symbols
7	Tuesday, February 18	Applications of Part Modeling and Drawings, Sectional View
8	Tuesday, February 25	Fundamentals of Descriptive Geometry, Fasteners HW1 Due Date!!! MIDTERM EXAM 1
9	Tuesday, March 4	Assembly
10	Tuesday, March 11	*** SPRING BREAK! ***
11	Tuesday, March 18	Assembly Drawings Second Progress Report Submission
12	Tuesday, March 25	Applications of Assembly and Assembly Drawings
13	Tuesday, April 1	Mechanism Design HW2 Due Date!!! MIDTERM EXAM 2
14	Tuesday, April 8	Simulation Applications of Mechanism Design
15	Tuesday, April 15	Extra Feature of Solid Works, Final Project Submission <u>Project Submission Due Date</u> (through Blackboard)
16	Tuesday, April 22	Final Project Revised/Edited Submission *** Final Design Presentations! *** - 12:00-2:00PM @ EC3239



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Assessment

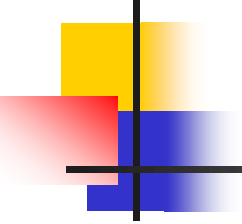
- This course is very time consuming.
- This is a three credit hours course, so expect to work at least three hours outside of class.
- To successfully progress through the course, students must understand each of the topics in the order it is presented.
- Students missing class are still responsible for the material covered in class.
- Students are expected to comply with all requirements for the class.
- Drawing assignments and projects will be graded based on content and neatness. Grades are not given, they are earned.
- You are expected to accept all responsibility for your performance in the class.
- Filenames should be

YourLastNameFirstName_YourPantherIdNumber_A#.*

Midterm Exam I (Week 8)	20 %
Midterm Exam II (Week 13)	20 %
Homework I (Week 8)	10 %
Homework II (Week 13)	10 %
Assignments <Average of the assignments>	20 %
Quizzes	5 %
Design Project (Week 16)	15 %

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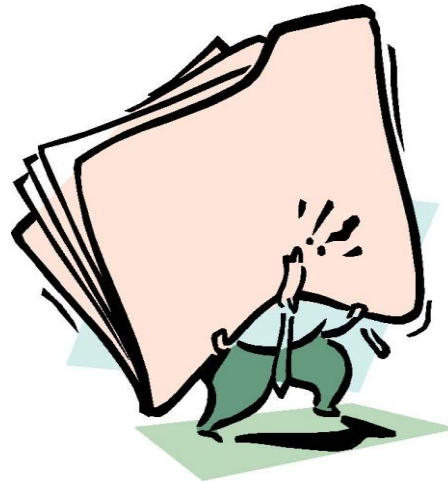
Exams (40%)

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- There will be two midterm exams in the class, open books and notes.
 - No make-up exam will be given (a grade of zero will be assigned) except for **a verified and written excuse.**
 - The instructor should be informed in advance or no later than 48 hours after the exam in case of an emergency. It is the instructor's discretion to give the make-up exam.
 - Filename should be **YourLastNameFirstName_YourPantherIdNumber_ME#.***

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Homework (20%)

- All homework and project assignments have to be submitted in both printed copy and electronic copy on time.
- Late homework and projects will have 20% per day penalty.
- The electronic copies have to be submitted through Blackboard with a file name of **YourLastNameFirstName_YourPantherIdNumber_HW#.***



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Assignments (20%)

- Draw all assignments using a Solid Works program which is available in Computer laboratory.
- You are to stay in the laboratory and work on your PC until they are completed and handed in or the class ends.
- It is up to each student to complete the work.
- **No credit will be given for late work.**
- Assignments will be collected within the last five minutes of class.
- **Repeating the assignments is not possible.**
- The student should print their name clearly on the paper.
- **The usage of any instant messenger program or cellular phones is not allowed during class hours.**

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Quizzes (5%)



- Pop-up quizzes will be given in the class without previous announcement, open books and notes.
- There is no make-up quiz.

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Final Project (15%)

- The final project will be presented in class.
- The design team will be formed by 3-4 members;
- One of the team members will be selected as a team leader;
- The team activity schedule will be prepared;
- The course instructor will be informed about your team, the leader, and the team activity schedule;
- Otherwise, the design teams will be organized by the course instructor;
- Progress report will be submitted during the 5th, and 11th course weeks.

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Evaluation and overall grading scale



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Final grade will be awarded as following. **However, the instructor may adjust the scale according to the class performance for a better curve.** The following grading scale is the suggested grading scale. (If the year-end grade average is below 40/100, the letter grade assigned will be FF.

Grade	Points Per Credit Hour
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
D-	0.67
F	0.00



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Catalogue Description

- Introduction of technical graphical visualization and communication for mechanical design;
- Knowledge and skills of using a software package to create the ANSI standards multi-view and 3-D drawings.

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Course Objectives



This is a fundamental course of CAD designed for freshmen undergraduate students in mechanical engineering. The course provides students,

- The basic concepts of mechanical engineering design,
- The knowledge and skills of technical graphical visualization and communication,
- The technical drawing software will be used in this course to create multi-view and 3-D drawings for mechanical engineering designs following ANSI standards,
- The project-based practices will be used to reinforce students' team work skills for their further studies and future professional careers.

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Learning Outcomes



In successfully completing this course students will,

- Students will gain knowledge and skills for technical graphical visualization and communication, understanding basic concepts of mechanical engineering design.
- Be able to use a technical drawing software package to create multi-view and 3-D drawings for mechanical engineering designs following ANSI standards.
- They will be reinforced team work skills to be successful working in team projects and in their future professional careers.

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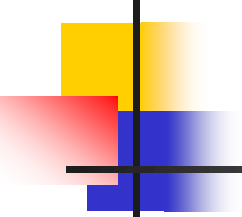
Attendance Policy



- Attendance is expected at all lectures.
- Proper learning of the course material can only be achieved through regular course attendance and an abundance of time spent completing all of the assigned homework and practicing the skills introduced in this course.
- Please be aware that the material is cumulative in this class, which means that you should try to make every effort in a timely manner.

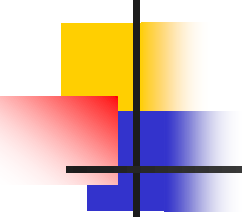
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Caution

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- Students are reminded not to treat this course instruction manual as a comprehensive and solely sufficient material for their studies since the purpose of this course manual is not meant to be a substitute for regularly attending classes, reading relevant textbooks, recommended books.
 - The course instruction manual is aimed at providing a quick reference and a brief guidance for the students.

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General Skills

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- The course is designed to give undergraduate engineering student ability to read and write the language of Engineering Graphics.
 - It provides the undergraduate engineering student with a background in descriptive geometry, orthographic projection, basic dimensioning, auxiliary and section views, and computer-aided engineering graphics.
 - Students are to learn to use a commercial CAD package.

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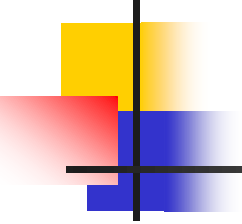
Academic Dishonesty



- Cheating and plagiarism are serious academic matters and they will be handled by the following policy and by the University policy and will result a final grade of "F" for the course.
- The case will be reported to the Dean of Students for disciplinary action. **No exceptions.**
- Please avoid cheating or any other form of misconduct. If you are having personal problems, come and talk to me.

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Disclaimer

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- The course schedule, content, and assignments are subject to modification when circumstances dictate and as the course progresses and mature.
 - If changes are made, you will be given due notice.

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Computer Usage

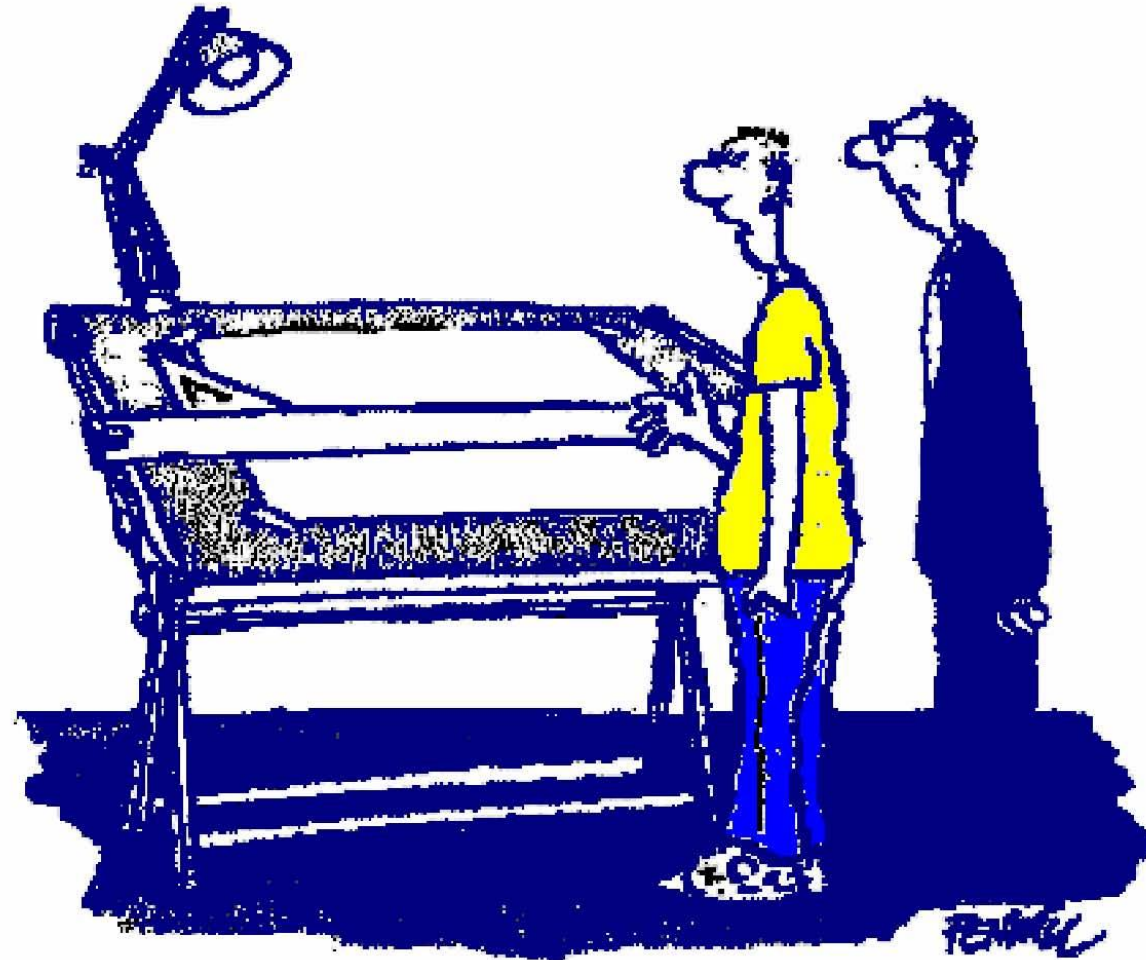
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- Students are required to use software tools such as Solid Works for the projects and assignments.

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**I wish you a very productive
semester, lot of success and
fun!**

EML1533 – Introduction to CAD for MEs



" I HAVEN'T MUCH EXPERIENCE OF SUCH AN EARLY
VERSION OF AUTOCAD "