

IE 111-COMPUTER AIDED ENGINEERING DRAWING (2 2 3)

2011-2012 Fall

Course Syllabus

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Lecture Hours: **Section 1** –
Monday 16:40–17:30 @OA207,
Wednesday 14:40–16:30 @OA 210
Section 2 –
Wednesday 12:40–14:30 @OA210,
Friday 14:40–16:30 @OA 207
Section 3 –
Thursday 12:40–14:30 @OA210,
Friday 12:40–14:30 @OA 207

Office Hours: Thursday 15:00-17.00.
Appointments are accepted.

Web site: <http://ie111.cankaya.edu.tr>

Course Description: Engineering drawing is the language of the engineers and technicians. Therefore, it is the intent of this course to equip students with the fundamentals of this unique language and to give them the skills necessary to prepare complete, concise, and accurate communications through engineering drawings using AutoCAD.

Course Objective: The aim of this course is to introduce students the basic concepts and the use of engineering drawing in the design and manufacturing field. The students acquaint with the basic knowledge and skills in engineering drawings and the capability to read and interpret blue prints for manufacturing. The students can also develop an understanding of 2D and 3D computer aided drafting with the requirements of good engineering drawings and be able to apply them to their work.

It is essential to know the technical drawing rules before starting CAD-CAM programs. Using computers at the beginning of the engineering education will help the students visualize engineering components. Appropriate sketching exercises will be done during practice hours by using a package program namely AutoCAD. The CAD software should be perceived by the student as a tool for producing engineering drawings. However, it should be strongly felt that students should design shapes that suited the purpose and manufacturing methods rather than being driven by the software capabilities. *Note that IE 111 is not AutoCAD course but an engineering drawing course.*

Course Material: Text Book is "Fundamentals of Graphics Communication, Bertoline & Wiebe, 6th Edition, McGraw-Hill International Edition."

Lecture notes are to be provided via the web site of the course (possibly before the lecture hour) as pdf files. These files will include PowerPoint slides presented in the class. Study sets will be posted on

course's web site at the beginning of each chapter. It is strictly recommended that the students review the topics by working on these study sets given for student's benefit.

Examinations: There will be 2 mid-term examinations, 1 final examination, and 3 quizzes. The examinations and the quizzes will be computer based and students are asked to prepare a given drawing using AutoCAD. These exams basically aim to evaluate the engineering drawing knowledge of the student, not only the AutoCAD usage. Quizzes will be scheduled before each examination. Thus, the quizzes can be perceived as exercises covering the topics so far.

Practice hours: Last two hours of the class are appointed to recitation of the subjects covered during the first two hours. The students will work on examples during the recitations in order to be equipped for preparing engineering drawings by computer means. The students are expected to complete the exercises during the recitation period. Completion of the exercises is to be checked and this will add points to the overall grade of the student.

Term project: There will be a term project covering the fundamental issues of engineering drawing. In this project the students are expected to prepare engineering drawings of either a real engineering part or a part whose isometric view is presented as a printed material.

Attendance: According to the university regulations, students must attend at least 70 % of the lecture hours and 80 % of the recitation/laboratory hours. Otherwise, the student gets NA (Not attended) from the course. Valid excuses are exempt from computation of these percentages.

Apart from the university regulations, it is of student's benefit to attend all of the lecture and recitation/laboratory hours. In fact, the students are expected to attend all of the sessions throughout the semester, since the sessions follow a series of applications.

Grading: Overall final grade will be over 1000 points. Weight of each grading item will be as below.

MT-1 exam grade over 150

MT-2 exam grade over 250

Final exam grade over 250

Quiz grades over 150 (3 x 50)

Practice hour performance over 100

+ Term project grade over 100

Final grade over 1000

All the announcements, including the examination dates will be posted on the course web site.

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Reference Books:

1. **Introduction to AutoCAD 2011** – 2D and 3D Design, A.Yarmwood, Newnes Elsevier Inc., ISBN: 978-0-08-096575-8
2. **Engineering Drawing and Graphic Technology-International Edition**, Thomas E. French, Charles J. Vierck, Robert J. Foster, McGraw-Hill, Inc.1993 ISBN 0-07-022347-5
3. **Engineering Drawing and Design-Sixth Edition**, C. Jensen, J.D. Helsel, D.R. Short, McGraw-Hill, 2002, ISBN 0-07-821343-6 (T 353 J47 2002)
4. **Technical Drawing-Twelfth Edition**, F. E. Giesecke, A. Mitchell, H. C. Spencer, I.L. Hill, J.T. Dygdon, J.E., Novak, Prentice-Hall, Inc., 2003, ISBN 0-13-178446-3 (T 353 T43 2003)
5. **Mechanical Engineering Drawing-Self Taught**, Jashua Rose,
<http://www.gutenberg.org/files/23319/23319-h/23319-h.htm>

Tentative weekly course schedule:

week	Lecture Topic
week 1	Introduction to Engineering Graphics
week 2	Geometrical Construction Coordinate systems Basic entities
week 3	Geometrical Construction Drawing simple geometric objects
week 4	Geometrical Construction Drawing simple geometric objects
week 5	Introduction to 3-D Modeling
week 6	Orthographic Projection Projection theory
week 7	Orthographic Projection Projection of principal views from 3D models
week 8	Orthographic Projection Projection of the 3rd principal view from other two principal views
week 9	Isometric Drawing Theory
week 10	Isometric Drawing Isometric drawing techniques
week 11	Section views Types of section views
week 12	Section views Sectioning techniques
week 13	Dimensioning
week 14	Review Exercises