ENGG 110.02 ENGINEERING GRAPHICS
Fall 2016

Instructor:

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Course Data:

Hours: TTT 678
Room: M3160

Teaching Assistants:

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Course Description (2005 Catalog):
ENGG 110 Engineering Graphics   **(2+2+0)I,II:3**

Principles of Engineering drawing, lettering, dimensioning, orthographic drawing, pictorial and sectional views. Introduction to computer aided drafting.

Course Objectives:

The aim of the course is to facilitate the students' usage of Graphic Methods that represent three-dimensional objects visually. Through weekly practice in the class-laboratory either with actual instruments on hard paper or virtual instruments on CAD virtual space, students:

- Learn to understand and visualize 3-D objects in space
- Learn to represent and present these objects on the 2-D drawing plane
- Solve simple geometric problems using graphic techniques
- Understand the importance of presenting objects (products of a design process) visually through the usage of Graphic Language

Textbook:

- Giesecke, F.E., Mitchell, A., Spencer, H.C., Hill, I.L., Dygdon, J.T., and Novak, J.E., with Lockhart, S., Technical Drawing, 13rd Ed., Prentice Hall, 2003.

Ref. Books: N/A

Computer Usage: Usage of the AutoCAD 2007 is required for certain sessions within the course.

Laboratory Sessions: The course is comprised of laboratory sessions designed to improve the practice of mechanical as well as computer aided drafting techniques.

Class Policies:
Students are expected to attend all lectures. Students are expected to have read the chapters assigned. Students should come to class on time. Leaving the classroom before the end is not acceptable unless permission has been granted beforehand. Failure of proper conduct may lead to expulsion from the class.
HOMEWORK: Homework will be given and graded. All homework is due at the beginning of the class one week from the day it is assigned. Some points will be reduced from any homework that is not turned in on time. Any homework duplication will result in a grade of zero for the entire homework.

GRADING: 10 Plates (drawings on hard paper) & CAD applications in class and CAD assignments 80% + Final (Comprehensive) 20%

MAKE-UP EXAM: Those having proper medical excuses may take a make-up exam.

Contribution of the Course to Program Outcomes:
This course is intended to contribute to the following program outcomes:

	(a)	An ability to apply knowledge of mathematics, science and engineering
	(b)	An ability to design and conduct experiments, as well as to analyze and interpret data
✓	(c)	An ability to design a system, component, or process to meet desired needs
	(d)	An ability to function on multi-disciplinary teams
	(e)	An ability to identify, formulate and solve engineering problems
	(f)	An understanding of professional and ethical responsibility
✓	(g)	An ability to communicate effectively
	(h)	The broad education necessary to understand the impact of engineering solutions in a global and societal context
	(i)	A recognition of the need for, and ability to engage in life-long learning
	(j)	A knowledge of contemporary issues
✓	(k)	An ability to use the techniques, skills and modern engineering tools necessary for engineering practice

Course Assessment: The course will be assessed on the basis of the accomplishments regarding the course objectives and the contributions to the program outcomes.

Week	Topics	Reading Assignments	Drawing Assignments	Objectives
1	Introduction: Drawing Instruments	Ch. 1, Ch. 2, Ch. 3	Lettering	Acquaint the student with necessary tools for the course
2	Geometric Constructions	Ch. 4	Plate #1	Familiarize students with the usage of drafting equipment while constructing geometric shapes like inscribed octagons or ellipses
3	Sketching and Shape Description	Ch. 5	Plate #2	Familiarize students with multiview projection technique of shape description - drawing the regular views of an object
4	Sketching Plate in Computer(ACAD)			Sketching drawn with AutoCAD
5	Multiview Projection	Ch. 6	Plate #3	3 regular views of an object presented in multiview projection format Drawing one regular view with use of AutoCAD + computer
6	Sectional Views	Ch. 7	Plate #4	Concept of cutting plane through an object and presentation of resulting sectional view in multiview projection format
7	Oblique Projection	Ch. 18	Plate #5	To create a 3-D description of the object through an oblique Cavalier projection drawing
8	Axonometric Projection	Ch. 17	Plate #6	To create a 3-D description of the object by rotating the object so that the edge formed by the front and side views is parallel to the plane of projection
9	AutoCAD (Multiview&Sectional Views in ACAD)		Plate#7 (AutoCAD)	Drawing isometric projection from 3 regular views with AutoCAD and dimensioning
10	Auxiliary Views	Ch. 9	Plate #8	To show the true shape and size of surfaces at an angle to the plane of sight of regular views
11	Dimensioning with Auxiliary Views		Plate #9	Usage of dimensioning techniques on previous drawings & AutoCAD drawing of auxiliary views
12	Design & Working Drawings		Plate #10	Designing an object and presenting it either with conventional drafting techniques or AutoCAD
13	PROJECT			