MECH113 COMPUTER AIDED ENGINEERING DRAWING I

Course Code:	3650113
METU Credit (Theoretical-Laboratory hours/week):	(2-2) 3
ECTS Credit:	4.5
Department:	Mechanical Engineering
Language of Instruction:	English
Level of Study:	Undergraduate
Course Coordinator:	Instr. Dr. Murat Sönmez
Offered Semester:	Fall Semesters (Mechanical, Chemical, Petroleum Engineering Programs) Spring Semester (Civil Engineering Program)

Course Objective

In this course, mainly it is aimed to provide students with the writing and reading principles of "Engineering Drawing", which is a graphical universal language used in technical world for describing the shape and size of an object via supplying orthographic views and/ or solid models associated with all the necessary dimensions, associated tolerances and annotations created in a CADD environment

Course Content

Introduction to engineering drawing; drafting as a language, drafting environment, board drafting, Computer Aided Drawing and Design. Geometrical Constructions; two- dimensional sketching, sketching for creating solid models, drawing and editing commands in CAD environments. Orthographic projection; 1st and 3rd angle projection, Principal views, Basic Dimensioning, size tolerances. Creating three- dimensional models; Extrude, Revolve, Holes, Shell, Fillet, Chamfer, Split, Sculpt, Work Planes, Ribs, Loft, Sweep. Creating orthographic views from a solid model, Auxiliary views. Pictorial Drawing; Isometric Drawing, Oblique Drawing. Sectioning and conventions.

Learning Outcomes

Having successfully completed this course, the student will be able to:

(1) Draw two-dimensional sketches, views in CAD environment (particularly in AutoCAD and Autodesk Inventor)

(2) Create solid models of objects; objects in basic shapes, composite bodies, custom built machine parts, building modules etc.

(3) Draw the orthographic views of an object in CAD environment (particularly in Autodesk AutoCAD environment).

(4) Create the orthographic views of an object from the solid model (particularly in Autodesk Inventor environment).

(5) Dimension the views, show some annotations, provide the size tolerance of functional features, and general tolerances

(6) Explain and interpret the dimensions and the associated tolerances, some annotations

(7) Read the given orthographic views; i.e. visualize the 3- Dimensional model of the object shown to its orthographic views and create its CAD model.

(8) Create auxiliary views, revolved views, sectional views.

In short, having successfully completed this course, the student will be able to write and read the language of industry, “Engineering Drawing”