

CVE 101 CIVIL ENGINEERING DRAWING

Course Code:	3640101
METU Credit (Theoretical-Laboratory hours/week):	(2-2) 3
ECTS Credit:	4
Department:	Civil Engineering
Language of Instruction:	English
Level of Study:	Undergraduate
Course Coordinator:	Assoc. Prof.. Dr. Murat Sönmez
Offered Semester:	Spring Semester

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

The course also aims to introduce the students to civil engineering drawing in AutoCAD environment and also to BIM (Building Information Modeling) in Autodesk Revit environment, and highlights the value of Autodesk Inventor on Structure Modelling

Course Content

Introduction to engineering drawing; drafting as a language, drafting environment, board drafting, Computer Aided Drawing and Design. Geometrical Constructions; two- dimensional drawing, sketching for creating solid models, drawing and editing commands in AutoCAD environment, 2D and 3D tools of AutoCAD. Orthographic projection; 1st and 3rd angle projection, Principal views, Basic Dimensioning, size tolerances, Introduction to solid modelling in Autodesk Inventor, creating solid model of structures in Autodesk Inventor environment. Creating orthographic views from a solid model in AutoCAD, in Inventor, Introduction to BIM in Autodesk Revit. Model creation, view creation, in Revit

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)
- (2) Draw the orthographic views of an object in CAD environment (particularly in Autodesk AutoCAD environment).
- (3) Draw plan and elevation views of a building in AutoCAD environment
- (4) Create solid models of objects; objects in basic shapes, custom built components, building models etc. using the tools of AutoCAD
- (5) Create the solid model of structures in Autodesk Inventor environment
- (6) Create the 1st and 3rd quadrant orthographic views of an object from the solid model (particularly in Autodesk AutoCAD and Inventor environments).
- (7) Dimension views, show some annotations, provide the size tolerance of functional features, and general tolerances
- (8) 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.
- (9) Explain and interpret the dimensions and the associated tolerances, some annotations
- (10) Create the solid model of a building, plan, elevation, sectional and detail views in Autodesk Revit environment