

# MECH 114 COMPUTER AIDED ENGINEERING DRAWING II

<b>Course Code:</b>	3650114
<b>METU Credit</b>	3(2-2)
<b>ECTS Credit:</b>	4.5
<b>Department:</b>	Mechanical Engineering
<b>Language of Instruction:</b>	English
<b>Level of Study:</b>	Undergraduate
<b>Course Coordinator:</b>	Instr. Dr. Murat Sönmez
<b>Offered Semester:</b>	Spring Semesters.
<b>Prerequisite:</b>	MECH 113 with min. DD

## Course Objective

In this course, mainly it is aimed to provide students with geometrical tolerancing, surface symbols, the simplified, standard representation of common machine elements, CAD applications, working and assembly drawings, assembly modeling and CAD representations, animation, sheet metal drawing.

## Course Content

Geometric Tolerance; Feature control frame, tolerance zones, Symbols, Flatness, Straightness, Circularity, Concentricity, Position Control, Profile Tolerances, Run-out Control, Datums and datum features, Applications in AutoCAD and Autodesk Inventor environments, Surface Texture; Characteristics and symbols, Threaded Fasteners; Common Threaded Fasteners, bolts, nuts, cap screws, studs, Simplified Thread Representation, Applications in AutoCAD Mechanical and Autodesk Inventor environments, Keys, Splines, Pins, Retaining Rings, Rivets, Structural Beams, Springs, Simplified Representations, CAD applications, Shafts, Inventor Shaft Generator, Common Loci; Cycloid, Involute, Gears; Gear Terminology, Spur Gears, Helical Gears, Bevel Gears, Racks, Worm Gears, Chain Drives, Working Drawings of gears, CAD Applications, Bearings; Plain Bearings, Roller Bearings, Detail (Working) Drawings, Assembly Drawings; Assembly Modeling in Autodesk Inventor Environment, Animation, Welding Drawings; Welding Symbols, Introduction to Descriptive Geometry; Intersections and Developments, Sheet Metal Drawing.

## Learning Outcomes

The students are expected to acquire the ability to draw and read the standard drawings of common machine elements and working and assembly drawings in 2 and 3 Dimensional CAD environments; (particularly in AutoCAD Mechanical and AutoDesk Inventor).