



AutoCAD 2017 – Full Course

Who should do the course?

Engineers, designers, drafters and professionals with little or no experience with AutoCAD program.

Prerequisites

Microsoft Windows operating system,
Basic Engineering drawing

Course Contents

[30 HRS]

⇒ Introduction to AutoCAD

The advantages and use of AutoCAD, Graphical User Interface of AutoCAD, Workspace management.

⇒ File management

Creating a new file in AutoCAD, Opening an existing file, save a file to a location, Import and export functions

⇒ Setting up a drawing

Concept of modeling space, setting up the drawing limits, zooms, setting up the units of the drawing.

⇒ Command line Interface

Introduction to command line method, working on command line interface, command aliases

⇒ Status bar tools

Object snap and Object snap tracking, Ortho mode, Grid display, Grid snap etc.

⇒ Draw commands

Line, construction line, Polygon, Rectangle, Arcs, Circle, Revision cloud, splines, ellipse and elliptical arc, Points and point style, hatch and hatch edit, gradient and gradient edit, Table and Table styles, Text and Text editing.

⇒ Modify commands

Move, Copy, Mirror, Offset, Array [Rectangular, Polar, and Path array], Rotate, Scale, Stretch, Trim, Extend, Break [one point and 2 point], Join, Chamfer, Fillet, Explode, Divide, Measure.

⇒ Dimensioning commands

Linear dimensioning, aligned dimensioning, angular dimensioning, dimensioning a circle and arc radius and diameter, modify the dimension style.

⇒ Properties of Objects

Accessing the properties dialog, change the properties, Linetype and loading of linetypes, assigning the objects with different linetypes, lineweights of objects, assigning lineweights and displaying it in the drawing.

⇒ Inquiry commands

Distance, Radius, Angle, Area of enclosed objects, List and ID functions

⇒ Organizing your drawings

Concept of layer, Creating and deleting the layers, assigning the object to different layers, layer properties and functions

⇒ Working with Reusable content

Concept of block, creating block, Editing the block in block editor
Use of design center,
Importing layers, blocks, line type, dimension style etc. from another drawing.

⇒ Working on images in AutoCAD

Inserting images, scaling, and editing of images

⇒ Introduction to advanced AutoCAD functions

Concepts of productivity enhancement in drafting
Need for smart drafting techniques.

⇒ Geometric Constraints

Use of constraints in the drawing, parametric objects. Coincident, perpendicular, parallel, tangent, horizontal, vertical, collinear, concentric, smooth, symmetric, equal and fix constraints
Auto constrain and constrain bars.

⇒ Dimensional constraints

Aligned, horizontal, vertical, angular, radius and diameter constraints.
Dynamic dimensions.

⇒ Managing constrains

Parameters manager, constraint settings, deleting constraints

⇒ Dynamic blocks

Concept of parameters and actions in dynamic blocks

Point parameter, linear parameter, polar parameter, xy parameter, rotation parameter, alignment parameter, flip parameter, visibility parameter, lookup parameter, base point parameter

Move action, Scale action, Stretch action, Polar stretch action, Rotate action, Flip action, array action, lookup action and block properties.

⇒ External referencing

Concept of external referencing. Attach and overlay, insert xref, unload, reload, detach and bind xref. Xref saved path.

⇒ Attributes and attribute management

Creating attributes, inserting a drawing with attributes, editing the attribute values and attribute management.

⇒ Advanced draw commands

Polylines, different methods of making polylines, editing polylines, converting lines to polylines, boundaries, regions, advanced hatch and gradients, advanced object scaling methods.

⇒ Text and table styles

Creating a new style of text, creating new table styles and modifying table and text styles.

⇒ Advanced file management

Sheet set and sheet set management, creating a new sheet set and working on sheet sets.

⇒ Plotting your drawings

Using Page Setups

Plotting of drawings

Page setup manager,

Creating and working on a new page setup,

Creating plot styles and assigning it to the plotter.

Concept of Layout, viewport, model space and paper space,

Creating viewport, scale of the drawing in viewport,

Working on the drawing from layout,

Plotting from layout.

⇒ Introduction to 3d interface of AutoCAD

3d interface tools, view tools, 3d modeling tools, solid editing and visual styles tools, orbit tools

- ⇒ User Coordinate System (UCS) in 3D
Concept of UCS, working with UCS, UCS properties and UCS commands, dynamic UCS
- ⇒ Solid modeling techniques
Standard primitive solids, extrude, presspull, sweep, revolve, loft, Boolean operations [union, subtract, intersect commands], 3d move, 3d rotate, 3d align, 3d array commands, slice.
- ⇒ Solid editing techniques
Imprint edges, Fillet edges, chamfer edges, color and copy edges. Extrude faces, move faces, offset faces, delete faces, rotate faces, taper face, color faces, copy faces, clean, separate, shell, check.
- ⇒ Surface editing techniques
Trim, untrim, Extend surface, sculpt, convert to NURBS, convert to mesh,
- ⇒ NURBS surface editing
Concept of control vertices, adding, removing, showing and hiding control vertices, Rebuild command.
- ⇒ Meshes and Mesh editing
Mesh modeling tools, smoothing of meshes, refining mesh, crease and uncrease, split face, extrude face, merge face, close hole, collapse face and edge, convert to faceted and smooth solid, convert to faceted and smooth surface
- ⇒ Material and Material editor
Creating and assigning materials, default materials in AutoCAD library, editing the materials, texture application, mapping techniques [Planar, box, cylindrical and spherical mapping]
- ⇒ Lighting
Different types of lights[Point, spot and distant lights], inserting lights in scene and adjusting the properties of lights.
- ⇒ Cameras and animation
Creating and inserting cameras in scene, animating the camera, getting the output as video
- ⇒ Rendering
Rendering the scene, saving an output file, render preference dialog, settings of rendering.