



Course Title: AutoCAD 2012 Level II (3D)

Duration: 28 hours

Quick Start:

- Introduction to the 3rd dimension: -**The Z Axis**, the **Right Hand Rule**.
- Startup Exercise 1: "3D Gasket": - **Region**
 - **Subtract** (Boolean operation)
 - **Extrude**.
- Startup Exercise 2: "3D Office": - **Quick Select**
 - **Thickness**
 - **Point filters**
 - **Elevation**
 - **Inserting 3D blocks**
- Startup Exercise 3: "3D Pipes": - **Multiple viewport setup**
 - **3D Mirror** (3D operations)
 - **3D Array** (3D operations)
 - **3D Rotate** (3D operations)
 - **Align** (3D operations)
 - **Extrude (Path option)**
 - **Union** (Boolean operation)

Working in 3D space

- Specifying X,Y, Z coordinates in a 3D coordinate system
- Defining a User Coordinate System (UCS)
- Moving the UCS

Setting up and saving views

- Orthographic & Isometric views
- The 3D orbit tool
- The Steering wheel
- The View Cube
- Shading objects (Visual styles)
- Camera views
- Saving views

Creating 3D objects

- A predefined 3D Surface Mesh
- A ruled surface mesh
- A tabulated surface mesh
- A surface of revolution mesh
- An edge-Defined surface mesh

Creating 3D Solids

- Defined primitive solid, polysolid, helix
- Extruded solid
- Revolved solid, solid by sweeping, by lofting
- Composite solid (union, subtract, intersect)

- Shell command

Editing in 3D

- Rotating in 3D
- Arraying in 3D
- Mirroring in 3D
- Trimming, extending, filleting, chamfering

Sectioning solids

- Sectioning solids
- Slicing solids

Editing faces of 3D solids (Solid editing)

- Extrude faces, Taper faces.
- Move, rotate, offset, delete, copy, color faces
- Thicken faces
- Interference checking

Editing edges

- Color, copy edges
- Imprint, separate, cleaning solids

Using Materials

- Color, transparency, texture
- Modifying materials
- Maps: diffuse, bump, opacity
- Attaching materials
- Material mapping

Using lights

- Using the different types of lights
- Using shadows
- Modifying and deleting light

Rendering a drawing

- Preparing models for rendering
- Configuring rendering for different displays
- Setting rendering conditions
- Rendering selected objects

Working with raster images

- Different types of image
- Importing a raster image
- Saving rendered output as image

Working with Viewports

- Creating floating viewports
- Controlling visibility in viewports
- Editing viewports

Generating 2D drawings from 3D Solids:

- Solview
- Soldraw

- Solprof

Mesh Modeling:

- Mesh smoothing, refining
- Convert to Solid or to Mesh
- Subobject selection, Transform Gizmo
- Section Planes, live section
- Split mesh, extrude faces