**AutoCAD 2D & 3D**

Overview

AutoCAD® software for 2D and 3D CAD is engineered for the future. Work with Trusted DWG™ technology, and collaborate across desktop, cloud, and mobile. Includes AutoCAD mobile app.

Mainprops ltd provides effective and affordable training on various software packages in Computer Aided Design (CAD) Including the AUTODESK design packages such as AutoCAD Essentials (2D & 3D), AutoCAD P&ID, AutoCAD Plant 3D and AutoCAD MEP.

## Benefits of these Software packages includes

#### Simplified documentation

Boost detailing work with tools that create measurements based on your drawing context.

#### Connected design solutions

Connect your CAD workflow across desktop, cloud, and mobile solutions.

#### Innovative 3D design

Design and visualize virtually any concept with 3D free-form tools.

#### Personalized experience

Migrate your custom settings and files from previous releases.



**PART I – AutoCAD 2D Design**

Introduction to AutoCAD

* Exploring the User Interface
* Using Ribbon, Tool bars & Palettes
* The AutoCAD Coordinate systems
* Customizing the User Interface
* Editing Command Alias
* Tools and tool icons
* Changing AutoCAD workspaces

Drawing Objects

* The 2D Drafting & Annotation workspace
* Drawing Lines
* Drawing Circles, Arcs & Ellipses
* Drawing Polylines & Splines
* Rectangles & Polygons
* Points and Donuts
* Selecting Drawing Units
* Converting Drawings to new units
* Using & Creating Drawing templates
* Exercises

Navigating Drawing

* Using commands and panning a drawing
* Using the Zoom command to Navigate
* Understanding model and Paper Space
* Saving and restoring views

Modifying Objects

* Erase, Undo and Redo tools
* Copy, Move, Rotate & Mirror tools
* Offset, Array & Scaling objects
* Trim, Extend, Stretch, Break & Join
* Chamfer and Fillet tools
* Hatching tool
* Exercises

Drawing Accurately

* Snap and Grid
* Poly Tracking and Dynamic Input
* Object Snaps (Osnaps)
* Transparent commands
* Exercises

# Practice projects

* Engineering – Part Drawing
* Architecture – Layout drawing

Dimensions and Text

* The Dimension tools
* Adding dimensions using the tools
* Adding dimensions from the command line
* The Arc Length tool
* Dimension tolerances
* Text
* Symbols used in text
* Checking spelling
* Exercises

Orthographic and isometric

* Orthographic projection
* First angle and third angle
* Sectional views
* Isometric drawing
* Exercises

Other types of file format

* Object linking and embedding
* DXF (Data Exchange Format) files
* External References (Xrefs)
* DGN-Import and DGN-Export
* Multiple Document Environnent (MDE)
* Sheets
* Exercises

**PART II – AutoCAD 3D Design**

Introducing 3D modelling

* The 3D Modeling workspace
* Methods of calling tools for 3D modelling
* The Polysolid tool
* 2D outlines suitable for 3D models
* The Extrude tool
* The Revolve tool
* Other tools from the 3D Make control panel
* The Chamfer and Fillet tools
* Constructing 3D surfaces using the Extrude tool
* The Sweep tool
* The Loft tool

Exercises3D space

* The User Coordinate System
* The UCS icon
* Examples of changing planes using the UCS
* Saving UCS views

Creating 2D objects in 3D space

* The Surfaces tools
* Surface meshes
* The Edgesurf tool
* The Rulesurf tool
* The Tabsurf tool
* Exercises

Editing 3D solid models

* The Solid Editing tools
* More 3D models

Other features in 3D modelling

* Raster images in AutoCAD drawings
* Printing/Plotting
* Polygonal viewports
* Exercises

3D models in viewports

* Setting up viewport systems
* Revision notes
* Exercises

3D Solid Modify Tools

* Creating 3D model libraries
* Constructing a 3D model
* The 3D Array tool
* The Mirror 3D tool
* The Rotate 3D tool
* The Slice tool
* The Section tool
* Views of 3D models
* The Helix tool
* Using DYN
* 3D Surfaces
* Exercises

Rendering in AutoCAD 3D

* Setting up a new 3D template
* The Render tools and dialogs
* The Lights tools
* Setting rendering background colour
* Rendering a 3D model
* Adding a material to a model
* The 3D Orbit tool
* Producing hardcopy
* Other forms of hardcopy
* Saving and opening 3D model drawings
* Exercises

Accessing Help