

AUTOCAD 2D 3D Training Program



This Program is highly professional and Career Oriented program. This program completely based on the CAD system logics designing, development and deployment. We are covering the complete 2D and 3D aspects with the state of art real time LABS. More we are also having the latest software for these systems and we may able to cover up all new updates, features and exposures.

This Program is ideally suited to following individuals who are:

- **Fresh University Graduates and like to get the knowledge of CAD.**
- **Already working mechanical, civil, electrical engineers, architects who are willing to update and learn the new methodologies of AutoCAD 2D and 3D.**
- **Who want to be good and reputable jobs in the market and are like to enhance their skills in AutoCAD Software.**

Program is offered by: 3D Educators – Trainers & Consultants

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3D EDUCATORS

TRAINERS & CONSULTANTS

Program Details

Inauguration

The Training Program will be inaugurated by a senior member of 3DEducators

Program Structure

Number of classes in a week	Two Class Per Week
Duration of each class	2-Hour
Total Duration	32 Hours

Other Learning Activities:

Classroom Assignments	2
Presentations by Trainees	1
Total Labs	16
Final Project	1

Program Syllabus

COURSE OUTLINE:

This Course is comprehensively designed for engineers, who are concerned with the civil, architect, mechanical. The course will cover the detail interactive trainings on computers. Where at 3dEducators have the state of art labs with well-equipped latest and updated computers.

- ❖ Complete tools of AutoCAD
- ❖ Designing on 2D and 3D
- ❖ 3D Modeling and Techniques
- ❖ Working with Files and Objects
- ❖ Transforming Objects
- ❖ Overview Lab

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AutoCad 2D

FILES

	New	Creates a new drawing file:
	Open	Opens an existing drawing file:
	Close	Closes the drawing file:
Partial Load		Loads additional geometry into a partially opened drawing:
Save As	Save	Quickly saves the current drawing:
		Saves an unnamed drawing with a file name or renames the current drawing:
	Export	Saves objects to other file formats:
	Page Setup	Displays the Page Setup dialog box:
	Plotter Manager	Provides access to the Add Plotter wizard and the Plotter Configuration Editor:
Plot Style Manager		Provides access to the Add Plot Style Table wizard and the Plot Style Table Editor:
Plot Preview		shows how the drawing will look when it is printed or plotted:
	Plot	Plots a drawing to a plotting device or file:

DRAWING UTILITIES

	Audit	Evaluates the integrity of a drawing:
	Recover	Repairs a damaged drawing:
PURGE		
All		Removes all unused objects from the drawing database:
Layers		Removes unused layers from the drawing database:
Line Types		Removes unused linetypes from the drawing database:
Text Styles		Removes unused text styles from the drawing database:
Dimension Styles		Removes unused dimension styles from the drawing database:
Multi Line Styles		Removes unused multiline styles from the drawing database:
Blocks		Removes unused blocks from the drawing database:
Plot Styles		Purges the plot styles you specify by name:
Shapes		Removes unused shapes from the drawing database:
	Send	Faxes or emails the current drawing file
Drawing Properties		Sets and displays the properties of the current drawing:
Drawing History		Lists the most recently opened drawings; select a drawing to quickly open it
Exit		Quits the application; prompts to save documents

EDIT

Undo	Reverses the most recent operation:
Redo	Reverses the effects of the previous UNDO or U command:
Cut	Copies objects to the Clipboard and erases the objects from the drawing:
Copy	Copies objects to the Clipboard:
Copy with Base Point	Copies objects to the Clipboard with a base point:
Copy Link	Copies the current view to the Clipboard for linking to other OLE applications:
Paste	Inserts data from the Clipboard:
Paste as Block	Pastes objects from the Clipboard as a block:
Paste as Hyperlink	Pastes a hyperlink to the selected object:
Paste to Original Coordinates	Pastes objects to the same coordinates as in the original drawing:
Paste Special	Inserts data from the Clipboard and controls the format of the data:
Clear	Removes objects from a drawing:
OLE Links	Updates, changes, and cancels existing OLE links:
Find	Finds, replaces, selects, or zooms to specified te

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VIEW

Redraw Refreshes the display of all the viewports:
Regen Regenerates the drawing and refreshes the current viewport:
Regen All Regenerates the drawing and refreshes all viewports:

ZOOM

Realtime Zooms in realtime:
Previous Zooms to display the previous view:
Window Zooms to display an area specified by a rectangular window:
Dynamic Zooms to display the generated portion of the drawing:
Scale Zooms with a specified scale factor:
Center Displays a window specified by a center point and height:
In Increases the apparent size of objects in the current viewport:
Out Decreases the apparent size of objects in the current viewport:
All Zooms to display the entire drawing in the current viewport:
Extents Zooms to display the drawing extents:

PAN

Point Moves the drawing display in the current viewport:
Left Moves the view of the drawing by the specified distance:
Right Moves the drawing to the left:
Up Moves the drawing to the right:
Down Moves the drawing up:
Moves the drawing down:

Aerial View Opens the Aerial View window:
Named Views Creates and restores views:

DISPLAY

On Controls the visibility and placement of the UCS icon:
Origin Forces the icon to appear at the origin of the current coordinate system:

UCS Icon

ATTRIBUTE DISPLAY

Normal Displays visible attributes; hides invisible attributes:
On Makes all attributes visible:
Off Makes all attributes invisible:
Text Window Opens the AutoCAD text window:
Toolbars Displays, hides, and customizes toolbars:



INSERTS

Block	Inserts a block or another drawing:
External Reference	Attaches an external reference to the current drawing:
Raster Image	Attaches a new image to the current drawing:

LAYOUT

New Layout	Creates a new layout with page settings and plotting device information:
Layout from Template Layout Wizard	Inserts a new layout based on an existing layout template: Starts the Layout wizard to designate page and plot settings for a new layout:
3D Studio	Imports a 3D Studio file:
ACIS File	Imports an ACIS file:
Drawing Exchange Binary	Imports specially coded binary files:
Windows Metafile	Imports a Windows metafile:
Encapsulated PostScript	Inserts an Encapsulated PostScript file into the current drawing:
OLE Object	Inserts a linked or embedded object:
Xref Manager	Controls external references to drawing files:
Image Manager	Inserts images in many formats into an AutoCAD drawing file:
Hyperlink	Attaches a hyperlink to a graphical object or modifies an existing hyperlink:

FORMAT

Layer	Manages layers and layer properties:
Color	Sets the color for new objects:
Linetype	Creates, loads, and sets linetypes:
Lineweight	Sets the current lineweight, lineweight display options, and lineweight units:
Text Style	Creates or modifies named styles and sets the current style for text in your drawing:
Dimension Style	Creates and modifies dimension styles:
Plot Style	Sets the current plot style for new objects, or the assigned plot style for selected objects:
Point Style	Specifies the display style and size of point objects:
Multiline Style	Manages styles for multiple parallel lines:
Units	Controls coordinate and angle display formats and determines precision:
Thickness	Sets the current 3D thickness:
Drawing Limits	Sets and controls the drawing boundaries:
Rename	Changes the names of named objects:

TOOLS

Spelling Checks spelling in a drawing:
Quickly creates selection sets based on filtering criteria:

DISPLAY ORDER

Bring to Front Forces selected objects to be displayed in front of all other objects:
Send to Back Forces selected objects to be displayed behind all other objects:

Bring Above Object Forces selected objects to be displayed in front of a reference object:
Send Under Object Forces selected objects to be displayed behind a reference object:

INQUIRY

Distance Measures the distance and angle between two points:
Area Calculates the area and perimeter of objects or of defined areas:
Mass Properties Calculates and displays the mass properties of regions or solids:
List Displays database information for selected objects:
ID Point Displays the coordinate values of a location:
Time Displays the date and time statistics of a drawing:
Status Displays drawing statistics, modes, and extents:
Set Variable Lists or changes the values of system variables:

Properties Controls properties of existing objects:
AutoCAD Design Center Runs AutoCAD Design Center:

DISPLAY IMAGE

View Displays a BMP, TGA, or TIFF image:
Save Saves a rendered image to a file:

Move UCS Moves the defined UCS: UCS MOVE
Drafting Settings Specifies settings for Snap mode, grid, and polar and object snap tracking

Customize Menus Loads partial menu files:
Options Customizes the AutoCAD settings:

DRAW

<p>Line Ray Construction Line Multiline Polyline 3D Polyline</p> <p>Polygon Rectangle</p>	<p>Creates straight line segments: Creates a semi-infinite line: Creates an infinite line: Creates multiple parallel lines: Creates two-dimensional polylines: Creates a polyline with straight continuous linetype line segments in three-dimensional space: Creates an equilateral closed polyline: Draws a rectangular polyline:</p>
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ARC

<p>3 Points Start, Center, End Start, Center, Angle Start, Center, Length Start, End, Angle Start, End, Direction Start, End, Radius Center, Start, End Center, Start, Angle Center, Start, Length Continue</p>	<p>Creates an arc using three points: Creates an arc using the start point, center, and endpoint: Creates an arc using the start point, center, and included angle: Creates an arc using the start point, center, and length of chord: Creates an arc using the start point, endpoint, and included angle: Creates an arc using the start point, endpoint, and starting direction: Creates an arc using the start point, endpoint, and radius: Creates an arc using the center, start point, and endpoint: Creates an arc using the center, start point, and included angle: Creates an arc using the center, start point, and length of chord: Creates an arc tangent to the last line or arc drawn:</p>
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CIRCLE

<p>Center, Radius Center, Diameter 2 Points Tan, Tan, Radius Tan, Tan, Tan</p> <p>Donut</p> <p>Spline</p>	<p>Creates a circle using a specified radius: Creates a circle using a specified diameter: Creates a circle using two endpoints of the diameter: Creates a circle using three points on the circumference: Creates a circle tangent to two objects with a specified radius: Creates a circle tangent to three objects:</p> <p>Draws filled circles and rings:</p> <p>Creates a quadratic or cubic spline (NURBS) curve:</p>
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ELLIPSE

<p>Center Axis, End</p>	<p>Creates an ellipse using a center point: Creates an ellipse or an elliptical arc:</p>
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Arc	Creates an elliptical arc:
<u>BLOCK</u>	
Base	Creates a block definition from objects you select:
Define Attributes	Sets the insertion base point for the current drawing:
	Creates an attribute definition:
WBlock	Writes objects or a block to a new drawing file

POINT

Single Point	Creates a single point:
Multiple Point	Creates multiple points:
Divide	Places evenly spaced point objects or blocks along the length or perimeter of an object:
Measure	Places point objects or blocks at measured intervals on an object:
Hatch	Fills an enclosed area or selected objects with a hatch pattern:
Boundary	Creates a region or a polyline from an enclosed area:
Region	Creates a region object from a selection set of existing objects:
Multiline Text	Creates multiline text:
Single Line Text	Displays text on screen as it is entered:

DIMENSION

QDIM	Quickly create dimension arrangements:
Linear	Creates linear dimensions:
Aligned	Creates an aligned linear dimension:
Ordinate	Creates ordinate dimensions:
Radius	Creates radius dimensions for circles and arcs:
Diameter	Creates a diameter dimension for circles and arcs:
Angular	Creates an angular dimension:
Baseline	Creates a linear, angular, or ordinate dimension from the baseline of the previous dimension or a selected dimension:
Continue	Creates a linear, angular, or ordinate dimension from the second extension line of the previous dimension or a selected dimension:
Leader	Quickly creates a leader and leader annotation:
Tolerance	Creates geometric tolerances:
Center Mark	Creates a center mark for circles and arcs:
Oblique	Makes the extension lines of linear dimensions oblique:

ALIGN TEXT

Home	Moves dimension text back to its default position:
Angle	Rotates dimension text to an angle:
Left	Left justifies dimension text:
Center	Centers dimension text:
Right	Right justifies dimension text:
Style	Creates and modifies dimension styles:
Override	Overrides dimension system variables:

Update

Updates dimensions so they use the most current dimension style settings:



MODIFY

Properties
Match Properties

Controls properties of existing objects:
Copies the properties from one object to one or more objects:

OBJECT

External Reference

Bind
Frame
Image

Binds individual dependent symbols of an xref to a drawing:
Controls the visibility of the xref clipping boundaries:

Adjust
Quality
Transparency

Controls the image display of the brightness, contrast, and fade values of images:
Controls the display quality of images:
Controls whether background pixels in an image are transparent or opaque:

Frame

Controls whether AutoCAD displays the image frame or hides it from view:

Image
Xref

CLIP
Creates new clipping boundaries for an image object:
Defines an xref or block clipping boundary and sets the front or back clipping planes:

Viewport

Clips viewport objects:

Hatch
Polyline
Spline
Multiline

Modifies an existing hatch object:
Edits polylines and three-dimensional polygon meshes:
Edits a spline object:
Edits multiple parallel lines:

ATTRIBUTE

Single
Global
Text

Edits the variable attributes of a block:
Changes attribute information independent of its block definition:
Edits text and attribute definitions:

IN-PLACE XREF AND BLOCK EDIT

Edit Block or Xref
Add Objects to Working Set
Remove Objects from Working Set

Selects a block or xref for in-place editing:
Transfers objects from the host drawing to the REFEDIT working set:
Transfers objects from the REFEDIT working set to the host drawing:

Save Back Changes to Reference
Discard Changes to Reference

Saves REFEDIT working set changes:
Discards REFEDIT working set changes:

Erase
Copy
Mirror
Offset
Array
Move
Rotate
Scale
Stretch
Lengthen
Trim
Extend
Break
Chamfer
Fillet
Explode

Removes objects from a drawing:
Duplicates the objects you select:
Creates a mirror image copy of objects:
Creates concentric circles, parallel lines, and parallel curves:
Creates multiple copies of objects in a pattern:
Displaces objects a specified distance in a specified direction:
Moves objects about a base point:
Enlarges or reduces objects equally in the X, Y, and Z directions:
Moves or stretches objects:
Lengthens an object:
Trims objects at a cutting edge defined by other objects:
Extends an object to meet another object:
Erases parts of objects or splits an object in two:
Bevels the edges of objects:
Rounds and fillets the edges of objects:
Breaks a compound object into its component objects:



COURSE CONTENTS FOR MODULE II



AutoCad 3D

SURFACES

2D Solid	Creates solid-filled polygons:
3D Face	Creates a three-dimensional face:
3D Surfaces	Creates three-dimensional surface objects using a dialog box
Edge	Changes the visibility of three-dimensional face edges:
3D Mesh	Creates a free-form polygon mesh:
Revolved Surface	Creates a revolved surface about a selected axis:
Tabulated Surface	Creates a tabulated surface from a path curve and a direction vector:
Ruled Surface	Creates a ruled surface between two curves:
Edge Surface	Creates a three-dimensional polygon mesh:

SOLID

Box	Creates a three-dimensional solid box:
Sphere	Creates a three-dimensional solid sphere:
Cylinder	Creates a three-dimensional solid cylinder:
Cone	Creates a three-dimensional solid cone:
Wedge	Creates a 3D solid with a sloped face tapering along the X axis:
Torus	Creates a donut-shaped solid:
Extrude	Creates unique solid primitives by extruding existing two-dimensional objects:
Revolve	Creates a solid by revolving a two-dimensional object about an axis:
Slice	Slices a set of solids with a plane:
Section	Uses the intersection of a plane and solids to create a region:
Interference	Creates a composite 3D solid from the common volume of two or more solids:

SETUP

Drawing	Generates profiles and sections in viewports created with the SOLVIEW command:
View	Creates floating viewports using orthographic projection to lay out multi- and sectional view drawings of 3D solid and body objects:
Profile	Creates profile images of three-dimensional solids:

3D OPERATION

3D Array	Creates a three-dimensional array:
Mirror 3D	Creates a mirror image copy of objects about a plane:
Rotate 3D	Moves objects about a three-dimensional axis:
Align	Aligns objects with other objects in 2D and 3D:



3D MODIFY

SOLIDS EDITING

Trainers and Consultants

Union	Creates a composite region or solid by addition:
Subtract	Creates a composite region or solid by subtraction:
Intersect	Creates solids or regions from the intersection of solids or regions:
Extrude Faces	Extrudes selected faces on a solid object to a specified height or along a path:
Move Faces	Moves selected faces on a solid object to a specified height or distance:
Offset Faces	Equally offsets faces on a solid object by a specified distance or point:
Delete Faces	Deletes or removes faces, including fillets or chamfers on a solid object:
Rotate Faces	Rotates one or more faces on a solid object around a specified axis:
Taper Faces	Tapers faces on a solid object with a specified angle:
Color Faces	Changes the color of individual faces on a solid object:
Copy Faces	Copies faces on a solid object as a region or a solid body:
Color Edges	Changes the color of individual edges on a solid object:
Copy Edges	Copies 3D edges on a solid object as an arc, circle, ellipse, line, or spline:
Imprint	Imprints geometry on a face of a solid object:
Clean	Removes all redundant edges and vertices on a solid object:
Separate	Separates 3D solid objects with disjointed volumes into independent 3D solid objects:
Shell	Creates a hollow, thin wall with a specified thickness on a solid object:
Check	Validates a 3D solid object as a valid ACIS solid:

VIEWPORT

Named Viewports	Displays layout options for named viewports:
New Viewports	Opens a new viewport using a specified name:
1 Viewport	Returns the drawing to a single viewport view, using the view from the active viewport:
2 Viewports	Divides the current viewport in half:
3 Viewports	Divides the current viewport into three viewports:
4 Viewports	Divides the current viewport into four viewports of equal size:
Polygonal Viewport	Creates an irregularly shaped viewport defined by specifying points:
Object	Specifies a closed polyline, ellipse, spline, region, or circle to convert into a viewport:
Join	Combines two adjacent viewports into one larger viewport:
Named Views	Creates and restores views:

3D VIEW

Viewport	Presets Sets the three-dimensional viewing direction:
VPOINT	Displays a compass and tripod for defining a view direction in model space:

PLAN VIEW

Current UCS	Displays the plan view of a user coordinate system:
World UCS	Displays the plan view of the World Coordinate System:
Named UCS	Displays the plan view of a previously saved user coordinate system:
Top	Sets the view point to top: VIEW TOP
Bottom	Sets the view point to bottom: VIEW BOTTOM
Left	Sets the view point to left: VIEW LEFT
Right	Sets the view point to right: VIEW RIGHT
Front	Sets the view point to front: VIEW FRONT
Back	Sets the view point to back: VIEW BACK
SW Isometric	Sets the view point to southwest isometric: VIEW SWISO
SE Isometric	Sets the view point to southeast isometric: VIEW SEISO
NE Isometric	Sets the view point to northeast isometric: VIEW NEISO
NW Isometric	Sets the view point to northwest isometric: VIEW NWISO
3D Orbit	Controls the interactive viewing of objects in 3D:
Hide	Regenerates a three-dimensional model with hidden lines suppressed:

ORTHOGRAPHIC UCS

Preset	Manages defined user coordinate systems:
Top	Specifies the Top UCS orientation:
Bottom	Specifies the Bottom UCS orientation:
Left	Specifies the Left UCS orientation:
Right	Specifies the Right UCS orientation:
Front	Specifies the Front UCS orientation:
Back	Specifies the Back UCS orientation:

NEW UCS

World	Sets the UCS to the World Coordinate System: UCS W
Object	Defines a new coordinate system based on a selected object: UCS OB
Face	Defines a new coordinate system based on a selected face: UCS FA
View	Establishes a new coordinate system with the XY plane parallel to the screen: UCS V
Origin	Defines a new UCS by shifting the origin: UCS O
Z Axis Vector	Defines a UCS using a positive Z axis extrusion method: UCS ZAXIS
3 Point	Specifies the new UCS origin and the direction of the X and Y axes: UCS 3
X	Rotates the current UCS about the X axis: UCS X
Y	Rotates the current UCS about the Y axis: UCS Y
Z	Rotates the current UCS about the Z axis: UCS Z
Apply	Applies current UCS to a selected viewport: UCS APPLY

SHADE

2D Wireframe	Set viewport to 2D wireframe:
3D Wireframe	Set viewport to 3D wireframe:
Hidden	Set viewport to hidden line:
Flat Shaded	Set viewport to flat shaded:
Gouraud Shaded	Set viewport to Gouraud shaded:
Flat Shaded, Edges On	Set viewport to flat shaded, edges on:
Gouraud Shaded, Edges On	Set viewport to Gouraud shaded, edges on:

RENDER

Render	Creates a photorealistic or realistically shaded image of a three-dimensional wire frame or solid model:
Scene	Manages scenes in model space:
Light	Manages lights and lighting effects:
Materials	Manages rendering materials:
Materials Library	Imports and exports materials to and from a library of materials:
Mapping	Maps materials onto objects:
Background	Sets up the background for your scene:
Fog	Provides visual cues for the apparent distance of objects:
Landscape New	Adds realistic landscape items, such as trees and bushes, to your drawings:
Landscape Edit	Edits a landscape object:
Landscape Library	Maintains libraries of landscape objects:
Preferences	Sets rendering preferences;
Statistics	Displays rendering statistics:
Named UCS	Manages defined user coordinate systems: