

# 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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# 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  |

3DE

## **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

|  |   |                    |  |
|--|---|--------------------|--|
| <p><b>Partial Load</b></p> <p><b>Save As</b></p>   | <p><b>New</b></p> <p><b>Open</b></p> <p><b>Close</b></p> <p><b>Save</b></p> <p><b>Export</b></p> <p><b>Page Setup</b></p> <p><b>Plotter Manager</b></p> <p><b>Plot Style Manager</b></p> <p><b>Plot Preview</b></p> | <p><b>Plot</b></p> | <p>Creates a new drawing file:</p> <p>Opens an existing drawing file:</p> <p>Closes the drawing file:</p> <p>Loads additional geometry into a partially opened drawing:</p> <p>Quickly saves the current drawing:</p> <p>Saves an unnamed drawing with a file name or renames the current drawing:</p> <p>Saves objects to other file formats:</p> <p>Displays the Page Setup dialog box:</p> <p>Provides access to the Add Plotter wizard and the Plotter Configuration Editor:</p> <p>Provides access to the Add Plot Style Table wizard and the Plot Style Table Editor:</p> <p>shows how the drawing will look when it is printed or plotted:</p> <p>Plots a drawing to a plotting device or file:</p> |
| <b>DRAWING UTILITIES</b>   |   |                    |  |
|  | <p><b>Audit</b></p> <p><b>Recover</b></p>   |                    | <p>Evaluates the integrity of a drawing:</p> <p>Repairs a damaged drawing:</p>   |
| <b>PURGE</b>   |   |                    |  |
| <p><b>All</b></p> <p><b>Layers</b></p> <p><b>Line Types</b></p> <p><b>Text Styles</b></p> <p><b>Dimension Styles</b></p> <p><b>Multi Line Styles</b></p> <p><b>Blocks</b></p> <p><b>Plot Styles</b></p> <p><b>Shapes</b></p> |   |                    | <p>Removes all unused objects from the drawing database:</p> <p>Removes unused layers from the drawing database:</p> <p>Removes unused linetypes from the drawing database:</p> <p>Removes unused text styles from the drawing database:</p> <p>Removes unused dimension styles from the drawing database:</p> <p>Removes unused multiline styles from the drawing database:</p> <p>Removes unused blocks from the drawing database:</p> <p>Purges the plot styles you specify by name:</p> <p>Removes unused shapes from the drawing database:</p>  |
| <p><b>Send</b></p> <p><b>Drawing Properties</b></p> <p><b>Drawing History</b></p>  |   |                    | <p>Faxes or emails the current drawing file</p> <p>Sets and displays the properties of the current drawing:</p> <p>Lists the most recently opened drawings; select a drawing to quickly open it</p>  |
| <p><b>Exit</b></p>   |   |                    | <p>Quits the application; prompts to save documents</p>  |

## EDIT

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

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## VIEW

|   |  |
|---|--|
| <b>Redraw</b><br><b>Regen</b><br><b>Regen All</b> | Refreshes the display of all the viewports:<br>Regenerates the drawing and refreshes the current viewport:<br>Regenerates the drawing and refreshes all viewports: |
|---|--|

### ZOOM

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

### PAN

|   |   |
|---|---|
| <b>Point</b><br><b>Left</b><br><b>Right</b><br><b>Up</b><br><b>Down</b><br><br><b>Aerial View</b><br><b>Named Views</b> | Moves the drawing display in the current viewport:<br>Moves the view of the drawing by the specified distance:<br>Moves the drawing to the left:<br>Moves the drawing to the right:<br>Moves the drawing up:<br>Moves the drawing down:<br><br>Opens the Aerial View window:<br>Creates and restores views: |
|---|---|

### DISPLAY

|   |  |  |
|---|--|--|
| <b>On</b><br><b>Origin</b><br><br><b>Normal</b><br><b>On</b><br><b>Off</b><br><b>Text Window</b><br><b>Toolbars</b> | Controls the visibility and placement of the UCS icon:<br>Forces the icon to appear at the origin of the current coordinate system:<br><br>Displays visible attributes; hides invisible attributes:<br>Makes all attributes visible:<br>Makes all attributes invisible:<br>Opens the AutoCAD text window:<br>Displays, hides, and customizes toolbars: | UCS Icon<br><br><br><br><br><br><u>ATTRIBUTE DISPLAY</u> |
|---|--|--|

## INSERTS

|                           |  |
|---------------------------|--|
| <b>Block</b>              | Inserts a block or another drawing:                    |
| <b>External Reference</b> | Attaches an external reference to the current drawing: |
| <b>Raster Image</b>       | Attaches a new image to the current drawing:           |

## LAYOUT

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

## FORMAT

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

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

## ARC

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

## CIRCLE

|                         |  |
|-------------------------|--|
| <b>Center, Radius</b>   | Creates a circle using a specified radius:                       |
| <b>Center, Diameter</b> | Creates a circle using a specified diameter:                     |
| <b>2 Points</b>         | Creates a circle using two endpoints of the diameter:            |
|                         | Creates a circle using three points on the circumference:        |
| <b>Tan, Tan, Radius</b> | Creates a circle tangent to two objects with a specified radius: |
| <b>Tan, Tan, Tan</b>    | Creates a circle tangent to three objects:                       |

**Donut** Draws filled circles and rings:

**Spline** Creates a quadratic or cubic spline (NURBS) curve:

## ELLIPSE

**Center** Creates an ellipse using a center point:  
**Axis, End** Creates an ellipse or an elliptical arc:

|                          |  |
|--------------------------|--|
| <b>Arc</b>               | Creates an elliptical arc:   |
| <b><u>BLOCK</u></b>      |  |
| <b>Base</b>              | Creates a block definition from objects you select:  |
| <b>Define Attributes</b> | Sets the insertion base point for the current drawing:<br>Creates an attribute definition: |
| <b>WBlock</b>            | Writes objects or a block to a new drawing file  |

## POINT

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

## DIMENSION

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

## ALIGN TEXT

|                 |  |
|-----------------|--|
| <b>Home</b>     | Moves dimension text back to its default position: |
| <b>Angle</b>    | Rotates dimension text to an angle:                |
| <b>Left</b>     | Left justifies dimension text:                     |
| <b>Center</b>   | Centers dimension text:                            |
| <b>Right</b>    | Right justifies dimension text:                    |
| <b>Style</b>    | Creates and modifies dimension styles:             |
| <b>Override</b> | 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

Controls the image display of the brightness, contrast, and fade values of images:

Quality  
Transparency

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** Selects a block or xref for in-place editing:  
**Add Objects to Working Set** Transfers objects from the host drawing to the REFEDIT working set:  
**Remove Objects from 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:

|                 |  |
|-----------------|--|
| <b>Erase</b>    | Removes objects from a drawing:                                    |
| <b>Copy</b>     | Duplicates the objects you select:                                 |
| <b>Mirror</b>   | Creates a mirror image copy of objects:                            |
| <b>Offset</b>   | Creates concentric circles, parallel lines, and parallel curves:   |
| <b>Array</b>    | Creates multiple copies of objects in a pattern:                   |
| <b>Move</b>     | Displaces objects a specified distance in a specified direction:   |
| <b>Rotate</b>   | Moves objects about a base point:                                  |
| <b>Scale</b>    | Enlarges or reduces objects equally in the X, Y, and Z directions: |
| <b>Stretch</b>  | Moves or stretches objects:  |
| <b>Lengthen</b> | Lengthens an object:   |
| <b>Trim</b>     | Trims objects at a cutting edge defined by other objects:          |
| <b>Extend</b>   | Extends an object to meet another object:                          |
| <b>Break</b>    | Erases parts of objects or splits an object in two:                |
| <b>Chamfer</b>  | Bevels the edges of objects:                                       |
| <b>Fillet</b>   | Rounds and fillets the edges of objects:                           |
| <b>Explode</b>  | Breaks a compound object into its component objects:               |

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## 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:       |



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## 3D MODIFY

### SOLIDS EDITING

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

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## VIEWPORT

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

### 3D VIEW

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

### PLAN VIEW

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

## ORTHOGRAPHIC UCS

|               |  |
|---------------|--|
| <b>Preset</b> | Manages defined user coordinate systems: |
| <b>Top</b>    | Specifies the Top UCS orientation:       |
| <b>Bottom</b> | Specifies the Bottom UCS orientation:    |
| <b>Left</b>   | Specifies the Left UCS orientation:      |
| <b>Right</b>  | Specifies the Right UCS orientation:     |
| <b>Front</b>  | Specifies the Front UCS orientation:     |
| <b>Back</b>   | Specifies the Back UCS orientation:      |

## NEW UCS

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

## **SHADE**

|                                 |   |
|---------------------------------|---|
| <b>2D Wireframe</b>             | Set viewport to 2D wireframe:             |
| <b>3D Wireframe</b>             | Set viewport to 3D wireframe:             |
| <b>Hidden</b>                   | Set viewport to hidden line:              |
| <b>Flat Shaded</b>              | Set viewport to flat shaded:              |
| <b>Gouraud Shaded</b>           | Set viewport to Gouraud shaded:           |
| <b>Flat Shaded, Edges On</b>    | Set viewport to flat shaded, edges on:    |
| <b>Gouraud Shaded, Edges On</b> | Set viewport to Gouraud shaded, edges on: |



## RENDER

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

Students who are unable to appear for the final exam are required to submit a written application stating the reason for not appearing for the exam. 3D Educators reserves the right to approve or deny such applications. If approved, the student will be allowed to sit for the exam within one month. Failure to do so, the student will be resubmit the examination fee and sit the future schedule exam. Without passing of the exams no certification will be awarded.

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## **PRECAUTIONARY MEASURES**

- ✓ During Classes, you are requested to make sure that you are in isolated room, where no noise should be there except your voice.
- ✓ Kindly Switch Off your Cell Phone during the class, because it will disturb the quorum of class.
- ✓ If you have taken the admission in the course online, ethically it is recommended and suggested that you only avail this facility.
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