



Course Content

Course Description:

In this course you will cover additional features of AutoCAD including: xreferences, object linking and embedding (OLE), raster images and vector files, advanced layouts and plotting, 3D modeling basics, 3D display and viewing, user coordinate systems, wireframe modeling, solid modeling construction, advanced solids features, creating a background and lights for the model, creating 2D drawings from 3D models, working with Parametric Drawings, additional commands and features & how to improve productivity through customization of the menu, toolbars, tool buttons and shortcut keys. This course will use the latest version of the course materials.

Prerequisites

AutoCAD Level 1 or equivalent knowledge

Topics:

Advanced Selection Sets

- Concepts
- Selections Set Variables
- Changing the Settings
- Options, PICKFIRST, PICKADD,
- PICK AUTO, PICKDRAG
- Object Selection filters
- Qselect
- Filter
- Object Groups
- Group
- Creating a named Group
- Changing Properties of a Group

Block Attributes and Data Links

- Concepts
- Creating Attributes
- Steps for Creating and Inserting
- Block Attributes
- Attdef
- Saving and Inserting the Attributed Block
- The ATTDIA and ATTREQ Variables
- Displaying and Editing Attributes
- Attdisp, Attdedit, Multiple Attdedit
- Eattedit, Properties, Find, -Attdedit
- Global and Individual Editing
- Annotative Attributes

Block Attributes and Data Links, continued

- Redefining Attributes
- Battman

- Attredef
- Refedit, Properties, and Refclose
- The Block Editor
- Grip Editing Attribute Location
- Attsync
- Extracting Attributes
- Eatttext
- Updating Attribute Data
- DataLinks
- Datalink
- Datalinkupdate

Internet Tools and Collaboration

- Concepts
- Browser
- Inetlocation
- Communication Center
- Using Hyperlinks
- Hyperlink
- Hyperlinkbase
- Selecturl
- Creating Email and Web Pages
- Publishtoweb
- Etransmit
- Transmittal Setups
- Modify Transmittal Setup Dialog Box
- Creating .DWF and .PDF Files
- Raster Files and Vector Files
- Creating .DWF and .PDF Files with ePlot
- ePlot Options
- Creating .DWF and .PDF Files with Publish



AutoCAD Level 2

Course ID#: 0650-200-19-W

14 Hrs

- Publish
- AutoCAD's Sheet Set Manager
- Viewing .DWF and .PDF Files
- Autodesk Design Review
- DWF Underlay and PDF Underlay in AutoCAD
- Dwfattach, Dwfclip and Dwflayers
- To Detach a DWF or PDF Underlay
- Viewing URLs (Hyperlinks) in a .DWF Image
- Markup Set Manager
- The Markup Tools
- The Markup Process
- Markups in AutoCAD
- Opendwfm Markup and Markup
- Transferring AutoCAD Files Over the Internet
- Opening and Saving .DWF and .DWG Files via the Internet
- Using i-drop to Drag-and-Drop Drawing Files into AutoCAD

Xreferences

- Creating and Using XREFS
- Externalreferences or Xref
- Dependent Objects and Names
- Evaluating New layers
- Xattach, Xbind, and Adcenter
- VISRETAIN
- Xclip, XCLIPFRAME
- Demand loading (INDEXCTL, XLOADCTL AND XLOADPATH)
- Editing XRefs and Blocks
- Managing Xref Drawings
- PROJECTNAME
- Reference Manager
- XREFCTL

Object Linking and Embedding (OLE)

- Concepts
- Cut and Paste Between AutoCAD Drawings
- Cut and Paste Between AutoCAD and Other Windows Applications (OLE)
- The Windows Clipboard
- OLE Related Commands
- Copyclip, Copybase, Copylink, and Cutclip
- Pasteclip, Pasteorig, Pasteblock, and Pastespec
- Insertobj and Pasteashyperlink
- Managing OLE Objects
- Olelinks, Olescale and Olepen
- OLE right-Click Shortcut Men
- Other AutoCAD Commands with OLE Objects
- OLE-Related System Variables
- MSOLESCALE
- OLEHIDE

- OLEQUALITY and OLESTARTUP

Raster Images and Vector Files

- Concepts
- Raster Files versus Vector Files
- Attaching Raster Images and Importing Vector Files
- Exporting Raster and Vector Files
- Related Commands
- Attaching Raster Images
- Externalreferences
- Imageattach, Imageframe, and Imageadjust
- Imageclip, Imagequality, and Transparency
- Properties
- Draworder
- Saveimg
- Bmput, Jpgout, Pngout and Tifout
- Importing and Exporting Vector Files
- Import
- 3Dsin, Acisin, Acisout, and Stlout
- Dxfbin, Dxfout, Dxbbin and Psout
- Export and Exportpdf
- Attaching, Importing, and Exporting .DGN Files
- Attaching .DGN Files
- Dgnattach, Dgnclip, Dgnadjust and Dgnlayers
- DGNOSNAP
- Importing and Exporting .DGN Files
- Dgnimport, Dgnmapping and Dgnexport

Advanced Layouts, Annotative Objects & Plotting

- Concepts
- Advanced Layouts
- Layer Visibility for Viewports
- Layer, Vplayer and the PsLTSCALE
- Layer Property Overrides
- Linetype Scale in Viewports (PSLTSCALE)
- Dimensioning in Paper Space
- The "Reverse Method" for Calculating Drawing Scale Factor
- Steps for Calculating the Drawing Scale Factor by the "Reverse Method"
- Annotative Objects
- Setting Annotation Scale and Viewport Scale
- Creating and Displaying Annotative Objects in Multiple viewports
- SELECTIONANNODISPLAY
- Adding and Deleting Scale Representations for Annotative Objects
- Objectscale
- Adjusting Positions for Individual Annotative Object Scale Representations
- Annoreset
- ANNOALLVISIBLE



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- Annpupdate
- SAVEFIDELITY
- Linetype Scales for Annotative Drawings
- MSLTSCALE
- Applications for Multiple viewports
- Using Two Layouts to Plot the Same Geometry at Different Scales
- Using Two Viewports to Display the Same Geometry at Different Scales
- Using One Layout to Plot Xref Drawings in Multiple Viewports at Different Scales
- Plot Style Tables and Plot Styles
- What is the Difference between a Plot Style and a Plot Style Table?
- Color-Dependent and Named Plot Style Tables
- Attaching a Plot Style Table to a layout
- Stylesmanager
- Creating a Plot Style Table
- Editing Plot Styles
- Assigning Named Plot Styles to Objects
- Plotstyle
- Convertplotstyles and convertctb
- Plot Stamping (Plotstamp)

Sheet Sets

- Sheet Sets Concepts – Basic Principles
- Sheet Set Commands
- Opensheetset
- The Sheet set Manager and Sheetset
- To Create a Sheet, Import Layout as Sheet
- To Create a Sheet, new Sheet (From Template)
- To Place a View of a Drawing on a Sheet
- To View and Edit Sheet Set Properties
- To Organize Sheets, Subsets, and Views
- To Place View Label and Callout Blocks
- To Rename and Renumber Sheets and Views
- To Create a Sheet List Table
- Plotting and Publishing Sheet Sets
- To Transmit and Archive Sheet Sets
- Newsheetset
- To Create a “Blank” .DST File

3D Basics, Navigation, and Visual Styles

- Setting Up AutoCAD to Draw in 3D
- Setting Up a Workspace
- Activating the Acad3D or Acadiso3D Drawing
- Template
- 3D Coordinate Entry
- Coordinate Systems
- The World Coordinate System (WCS) and Icon
- User Coordinate Systems (UCS) and Icons
- The Right-Hand Rule
- Ucsicon

- 3D Display Commands
- 3D Navigation and View Commands
- Pan, Zoom, and Navvcube
- 3D Orbit Commands (3Dorbit, 3Dforbit, 3Dcorbit, PERSPECTIVE and 3Ddistance)
- View Presets
- Adjusting the Amount of Perspective
- 3Dclip and Camera
- Editing Camera Settings
- 3Dswivel and Navswheel
- SteeringWheel Shortcut Menu
- SteeringWheel Navigation Tools
- SteeringWheel Settings (Vpoint, Ddvpoint, Plan, Grid and Vports)
- Visual Styles
- Vscurrent
- Default Visual Styles
- Visual Style Properties
- Face Settings
- Shadow Settings
- Edge Effects
- Visual Styles Manager
- Adaptive Degradation and Performance Tuning
- Shade, SHADEDIF, SHADEDGE
- Render
- Printing 3D Models

User Coordinate Systems

- UCS Commands

WireFrame Modeling

- WireFrame Modeling Tutorial
- 3D Poly

Solid Modeling Construction

- Constructive Solid Geometry Techniques
- Solid Primitives Commands
- Commands for Moving Solids
- Boolean Operation Commands
- Design Efficiency
- Solids Editing

Advanced Solids Features

- Solid Modeling Display
- Analyzing Solid Models
- Creating Selections from Solids, Section, Slice
- Converting Solids

Creating 2D Drawings from 3D Models

- Using Mvsetup from Standard Engineering Drawings

Working with Parametric Drawings



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- Apply Automatic Geometric Constraints
- Apply Specific Geometric Constraints
- Create Dimensional Constraints
- Control the Display of Geometric Constraint Bars
- Control the Display of Dimensional Constraints
- Create User Defined Parameters for Dimensional Constraints

Miscellaneous Commands and Features

- Using Wildcards, RENAME, PURGE, MAXSORT
- The Geometry Calculator
- The Options Dialog Box

Miscellaneous Customization

- Introduction to the CUI
- Creating Custom Linetypes
- Customizing the ACAD.PGP File
- Creating Script Files