



# AutoCAD 2013 Training Seminar

By

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For

**Master Instructional Outline**

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## **1.0 CADD BASICS (Getting Started)**

- 1.1 Ergonomic Standards
- 1.2 File Management & Windows Explorer
- 1.3 CAD Standards
- 1.4 Basic Drawing Setup
- 1.5 Command Aliases
- 1.6 AutoCAD Tip Sheet
- 1.7 Layer Features
  - 1.7.1 Advanced Tools
  - 1.7.2 Video
  - 1.7.3 Layer Filters
  - 1.7.4 Layer State Manager
  - 1.7.5 Layer Check & Translator
  - 1.7.6 Reconcile & Isolation
- 1.8 Linetypes & Lineweights
- 1.9 Drawing Sheet Sizes Standard
- 1.10 Drawing Symbols & Ref Tables
- 1.11 CAD Glossary
- 1.12 AutoCAD Quick Help – Active F1
- 1.13 Prototypes & Templates

## **2.0 COORDINATE INPUT METHODS**

- 2.1 Coordinate Entry discussion
- 2.2 Lastpoint System Variable
- 2.3 The “ID” command
- 2.4 Using the From Osnap
- 2.5 Direct Distance Input
- 2.6 Point Filters (Extension & Parallel OSNAPS)
- 2.7 The “Tracking” Osnap (The King of Beers!)
- 2.8 Combining Direct Distance & Tracking
- 2.9 AutoTracking
- 2.10 Polar Tracking
- 2.11 Object Snap Tracking
- 2.12 Dynamic Input Modes**
- 2.13 Dimensional Input & Grips
- 2.14 Dynamic Input Guidelines
- 2.15 Pointer Input Guidelines
- 2.16 Constraining Dimensional Input
- 2.17 Temporary Overrides

### **3.0 OBJECT SNAPS (worksheet)**

- 3.1 Using “Insertion” and “Node” object snaps (Osnaps)
- 3.2 Identifying Osnaps on Text
- 3.3 Using ID & Insertion while working with Text strings
- 3.4 Enhanced Intersection & Apparent Intersections
- 3.5 Advanced Object Snaps
- 3.6 Using Extension Object Snap
- 3.7 Using Parallel Object Snap
- 3.8 Using the From Object Snap
- 3.9 Using The Tracking Object Snap
- 3.10 Using Running Object Snaps
- 3.11 Setting AutoSnap Features

### **4.0 USER INTERFACE**

- 4.1 Programming AutoCAD’s Desktop Icon
- 4.2 Controlling the Command Line
- 4.3 Ribbons & Panels (Sticky Panels)**
- 4.4 Noun/Verb Editing Methods
- 4.5 Profiles & Workspaces
- 4.6 Start AutoCAD using Different Workspaces
- 4.7 DesignCenter®
- 4.8 Properties Editor Palette
- 4.9 Selection Preview Features
- 4.10 Temporary Overrides
- 4.11 Grid System Changes
- 4.12 Undo/Redo Zoom & Pans
- 4.13 Dynamic Cursor Input
- 4.14 Full Screen (Clearscreen) Viewing
- 4.15 Entity Cycling
- 4.16 Toolbars & Tool Palettes
- 4.17 Other Interface Features
  - 4.17.1 Control Elements
  - 4.17.2 Context Menu Systems

#### **4.18 Add Selected (NEW)**

## 5.0 OBJECT SELECTION SETS

- Picking
- Window
- Crossing
- Entity Cycling
- Fence
- **Selection Cycling (NEW)**
- **Select Similar (NEW)**
- All
- Wpolygon
- Cpolygon
- Last
- Previous
- **Hide & Isolate (NEW)**

## 6.0 CONTEXT SENSITIVE MENUS

- 6.1 Default Mode
- 6.2 Edit Mode
- 6.3 Command Mode
- 6.4 Dialog Box Mode
- 6.5 Other Menus
- 6.6 Double-click Actions**
- 6.7 Contextual Tab States**

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- 7.2 System Variable Controlling the Elements
- 7.3 Changing Properties via Control Elements
- 7.4 Setting Drafting Properties (via Control Elements)

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- 8.2 Grip Status
- 8.3 Auxiliary Snap grids
- 8.4 Point Specification Precedence

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  - 9.1.1 Entity Cycling (Selection Cycling)
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  - 9.1.4 Smartmode
  - 9.1.5 Active Status Line

- 9.2 Express Tools
  - 9.2.1 Enhanced AutoCAD Features
  - 9.2.2 Block Express Tools
  - 9.2.3 Text Express Tools
  - 9.2.4 Superhatch Tool
  - 9.2.5 xRef Express Tools
  - 9.2.6 Selection Express Tools
- 9.3 Tips & Tricks
  - 9.3.1 AutoCAD & OS Tips & Tricks

## **10.0 DRAWING FEATURES**

- 10.1 SHAPES
  - 10.1.1 Shapes Worksheet
  - 10.1.2 Geometric Construction Tools
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- 10.2 EDITING
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  - 10.2.2 Join
  - 10.2.3 Copy
  - 10.2.4 Fillet
  - 10.2.5 Offset
  - 10.2.6 Rectangle
  - 10.2.7 Rotate & Scale (BY REFERENCE)
  - 10.2.8 Stretch
  - 10.2.9 Trim & Extend
  - Formulas in Tables*
  - Tables Become Spreadsheets*
- 10.3 INQUIRY COMMANDS
  - 10.3.1 Area Feature (Add & Subtract Modes)

## **11.0 GEOMETRIC CALCULATOR (drawing) & FILTERS (drawing)**

- 11.1 GeoCal Features & interface
- 11.2 Using 'CAL for "Reference" Editing
- 11.3 New QuickCalc Features
- 11.4 Using the Filter Command Transparently
- 11.5 Using the Quick Select Filter

## **12.0 ANNOTATION**

### **12.1 TEXT**

- 12.1.1 Improvements in Annotation
- 12.1.2 Annotative Objects (drawing)
- 12.1.3 New Features
- 12.1.4 Spell, Find & Replace
- 12.1.5 Changing Text Size
- 12.1.6 ScaleText Command
- 12.1.7 SpaceTrans Commands
- 12.1.8 Changing Text Justification
- 12.1.9 Special Text Characters (toggles)
- 12.1.10 Designing Text Styles (preset heights)
- 12.1.11 Using Qtext
- 12.1.12 Customized Text Fonts
- 12.1.13 Automatic Text Justification options

### **12.2 ANNOTATIVE OBJECTS**

## **13.0 DIMENSIONING**

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- 13.1.1 Dimensioning Variables – Setup
- 13.1.2 Dimensioning Variables Worksheet
- 13.1.3 Dimensioning Commands & Features
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### **13.2 GDT GEOMETRIC TOLERANCE**

## **14.0 ELECTRONIC SCALING**

- 14.1 Overview
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- 14.3 Applying a Scale Factor
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- 14.9 Specific Scale Factor
- 14.10 Determine Free Space
- 14.11 Multi-Scaled Drawings 1 & 2
- 14.12 Scaling Entities
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- 14.14 Setting the Dimlfac



## **15.0 SHEET SET MANAGER**

- 15.1 Advanced Controls
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## **16.0 CORRUPT DRAWINGS & DISASTER RECOVERY**

- 16.1 Drawing Recovery Manager
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- 16.4 Removing Unauthorized Layers
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- 16.7 Recovering a Damaged Drawing File

## **17.0 PDF FEATURES (OUTPUT & UNDERLAY)**

## **18.0 CREATING ISOMETRIC DRAWINGS**

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- 18.2 Isometric drafting styles & isoplanes
- 18.3 Setting an isoplane, snap, & grid system
- 18.4 Nurbs technology & elliptical isocircles
- 18.5 Placing isocircles
- 18.6 Drawing cylindrical shapes
- 18.7 Section summary
- 18.8 Creating isometric text styles
- 18.9 Creating isometric arrowheads
- 18.10 Developing dimension styles & overrides
- 18.11 Setting dimension cosmetics for isos
- 18.12 Dimensioning isometrics process
- 18.13 Dimensioning the right isoplane
- 18.14 Creating cosmetic center lines
- 18.15 Student Worksheet

## **19.0 CAD STANDARDS CHECKING**

- 19.1 Creating a CAD Standards Checking File
- 19.2 Configuring a CAD Standards Checking File
- 19.3 Checking drawings for CAD Standards Compliance

## **20.0 LEFT INTENTIONALLY BLANK**

## **21.0 SYMBOLOGY**

### **21.1 STANDARD BLOCKS**

- 21.1.1 Creating Symbols as Blocks
- 21.1.2 Using Blocks in a Drawing
- 21.1.3 Editing Blocks
- 21.1.4 Creating a Block from a Drawing
- 21.1.5 Creating Blocks As Drawing Files
- 21.1.6 Symbol Libraries
- 21.1.7 Renaming Blocks
- 21.1.8 Deleting Blocks
- 21.1.9 Inserting Blocks using DesignCenter® & Tool Palettes

### **21.2 DYNAMIC BLOCKS**

### **21.3 PARAMETRIC CONSTRAINTS**

### **21.4 DESIGNCENTER®**

## **22.0 ATTRIBUTES**

- 22.1 Creating Attributes
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- 22.3 Creating Tables & Spreadsheets from Attributed Data

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- 23.2 Overlay versus Attachments
- 23.3 Attaching
- 23.4 Reloading & Unloading xRefs
- 23.5 Detaching
- 23.6 Binding
- 23.7 Layering schemes
- 23.8 Clipping xRefs

## **24.0 HATCH PATTERNS**

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- 24.2 Island Detection Methods
- 24.3 Pattern Types
- 24.4 Separating hatch patterns
- 24.5 Resetting the Origin of a hatch pattern
- 24.6 Scaling hatch patterns
- 24.7 Background color & Transparency

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- 25.2 Treestats
- 25.3 Treedepth
- 25.4 View transitions

## **26.0 PAPERSPACE & MVIEWES**

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- 26.2 Scaling floating Viewports
- 26.3 Viewport layering configurations
- 26.4 Viewport linetype, lineweights, & color schemes
- 26.5 Paperspace linetype scaling methods
- 26.6 Viewing Annotative Objects in Viewports

## **27.0 REVISION CLOUDS**

## **28.0 RASTER HYBRID QUALITY**

- 28.1 Raster Attachments
- 28.2 Relative Path

## **29.0 OS TECHNIQUES**

- 29.1 Batch Files
- 29.2 Script Files
- 29.3 Command Line

## **30.0 SYSTEM VARIABLES**

## **31.0 DOS REVIEW** (*Obsolete – For Reference Only with OS Techniques*)

## **32.0 AUXILIARY VIEWS**

- 32.1 Creating auxiliary views using Xline & Ray
- 32.2 Creating auxiliary views using Polar Tracking

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- 33.1 Creating AutoCAD Table Styles
- 33.2 Correcting Data Cell alignment & text height
- 33.3 Adjust Table Styles & Correcting Word wrap
- 33.4 Using Formulas In AutoCAD Tables

## **34.0 PLOT-PUBLISH & PAGESETUPS**

- 34.1 Plotting Layouts using Pagesetups
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- 34.4 Assigning Pagesetups to the Sheet Set Manager

## **35.0 DATABASE CONNECT**

## **36.0 OLE TECHNOLOGIES**

- 36.1 Creating Embeds using OLE server/client
- 36.2 Creating Links using OLE server/client

## **37.0 MULTILINES**

- 37.1 Creating Multiline Styles
- 37.2 Exporting & Importing Multiline files (\*.mln)
- 37.3 Adjusting end caps & corner displays
- 37.4 Scaling a Multiline style
- 37.5 Editing Multilines

## **38.0 SPLINES**

- 38.1 NURBS based Splines vs. Pedit Splines
- 38.2 Adjusting the start & end tangencies of splines

## **39.0 AUTOCAD & THE INTERNET**

- 39.1 Creating Area Based Hyperlinks
- 39.2 Creating Object Based Hyperlinks
- 39.3 Publishing Drawings to the Web
- 39.4 Using iDrop Technology

## **40.0 3D ADVANCEMENTS**

- 40.1 Mesh modeling video clips

## **41.0 SCRIPT FILES**

- 41.1 Automating Overnight plotting
- 41.2 Automating CAD Standards Setup
- 41.3 Creating and running slide shows

## **42.0 ADVANCED TOOLS**

## **AutoCAD R2011 National Certification Exam(s)**

### **Associate Level (written exam)**

30 Question Practice exam

### **Professional Level (drawing exams)**

Array-Hole.dwg

Baseline.dwg

Copy-Area.dwg

Dimension-Edit.dwg

Edit-Table.dwg

Hole-Edit.dwg

Insert-Move.dwg

Join-Arcs.dwg

Mirror-Part.dwg

Mleader-Edit.dwg

Mtext-Width.dwg

Object-Hatch.dwg

Offset-Object.dwg

Pedit-Join.dwg

Pline-Stretch.dwg

Plot-Offset.dwg

Prof Drawing Files.zip

Rotate-Plate.dwg

Scale-Text.dwg

Text-Height.dwg

Viewport-Edit.dwg

## REFERENCES & WORKS CITED

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