

# AutoCAD syllabus

## **1: INTRODUCTION TO AUTOCAD**

Starting AutoCAD

AutoCAD Screen Components

Drawing Area

Command Window

Navigation bar

Status bar

Invoking Commands in AutoCAD

Keyboard

Ribbon

Application Menu

Tool Palettes

Menu Bar

Toolbar

Shortcut Menu

AutoCAD Dialog Boxes

Starting a New Drawing

Open a Drawing

Start from Scratch

Use a Template

Use a Wizard

Saving Your Work

Save Drawing as Dialog box

Using the Drawing Recovery Manager to Recover Files

Closing a Drawing

Opening an Existing Drawing

Opening an Existing Drawing Using the Select File Dialog Box

Opening an Existing Drawing Using the Start up Dialog Box

Opening an Existing Drawing Using the Drag and Drop Method

Quitting AutoCAD

Creating and Managing Workspaces

Creating a New Workspace

Modifying the Workspace Settings

Autodesk Exchange

Home

## **2: GETTING STARTED WITH AUTOCAD**

Dynamic Input Mode

Enable Pointer Input

Enable Dimension Input where possible

- Show command prompting and command input near the crosshairs
- Drafting Tooltip Appearance
- Drawing Lines in AutoCAD
  - The Close Option
  - The Undo Option
- Invoking tools Using Dynamic INPUT/Command Prompt
- Coordinate Systems
  - Absolute Coordinate System
  - Relative Coordinate System
  - Relative Polar Coordinates
  - Direct Distance Entry
- Erasing Objects
- Cancelling and Undoing a Command
- Object Selection Methods
  - Window Selection
  - Window Crossing Method
- Drawing a Circle
- BASIC Display Commands
- Setting Units Type and Precision
  - Specifying the Format
  - Specifying the Angle Format
- SETTING the Limits OF A DRAWING

### **3: STARTING WITH ADVANCED SKETCHING**

- Drawing Arcs
- Drawing Rectangles
- Drawing Ellipses
- Drawing Regular Polygon
- Drawing Polylines
- Placing Points
- Drawing Infinite Lines
- Writing a Single Line Text

### **4: WORKING WITH DRAWING AIDS**

- Introduction
- Understanding the Concept and use of LAYERS
  - Advantages of Using Layers
- Working with Layers
  - Creating New Layers
  - Making a Layer Current
  - Controlling the Display of Layers
  - Deleting Layers
- Object Properties
  - Changing the Colour

- Changing the Line type
- Changing the Line weight
- Changing the Plot Style
- Properties Palette
- Quick Properties Palette
- Drafting Settings dialog box
  - Setting Grid
  - Setting Snap
  - Snap Type
- Drawing Straight Lines using the Ortho Mode
- Working with Object Snaps
  - Auto Snap
  - Endpoint
  - Midpoint
  - Nearest
  - Centre
  - Tangent
  - Quadrant
  - Intersection
  - Apparent Intersection
  - Perpendicular
  - Node
  - Insertion
  - Snap to None
  - Parallel
  - Extension
  - From
  - Midpoint between 2 Points
  - Temporary Tracking Point
  - Combining Object Snap Modes
- Running Object Snap Mode
  - Overriding the Running Snap
  - Cycling through Snaps
- Using Auto Tracking
  - Object Snap Tracking
  - Polar Tracking
  - Auto Track Settings
- Function and Control Keys



## **5: EDITING SKETCHED OBJECTS-I**

- Editing Sketches
- Moving the Sketched Objects
- Copying the Sketched Objects
  - Creating Multiple Copies

- Creating a Single Copy
- Offsetting Sketched Objects
- Rotating Sketched Objects
- Scaling the Sketched Objects
- Filleting the Sketches
- Chamfering the Sketches
- Trimming the Sketched Objects
- Extending the Sketched Objects
- Stretching the Sketched Objects
- Lengthening the Sketched Objects
- Arraying the Sketched Objects
  - Rectangular Array
  - Polar Array
  - Path Array
- Mirroring the Sketched objects
  - Text Mirroring

## **6: EDITING SKETCHED OBJECTS-II**

- Introduction to Grips
- Types of Grips
  - Editing a Polyline by Using Grips
  - Editing Gripped Objects
  - Changing the Properties Using the PROPERTIES Pale
  - Matching the Properties of Sketched Objects
  - Cycling Through Selection
- Managing Contents Using the Design enter
  - Autodesk Seek design content Link
  - Displaying Drawing Properties
  - Basic Display Options
  - Redrawing the Screen
  - Regenerating Drawings
- Zooming Drawings
  - Real-time Zooming
  - All Option
  - Centre Option
  - Extents Option
  - Dynamic Option
  - Previous Option
  - Window Option
  - Scale Option
  - Object Option
  - Zoom In and Out
- Panning Drawings
  - Panning in Real time

## **7: CREATING TEXT AND TABLES**

- Annotative Objects

- Annotation Scale

  - Assigning Annotative Property and Annotation Scales

  - Customizing Annotation Scale

- Multiple Annotation Scales

  - Assigning Multiple Annotation Scales Manually

  - Assigning Multiple Annotation Scales Automatically

- Controlling the Display of Annotative objects

- Creating Text

  - Writing Single Line Text

- Entering Special Characters

- Creating Multiline Text

  - Text Window

  - Text Editor Tab

- Editing Text

  - Editing Text Using the DDEDIT Command

  - Editing Text Using the Properties Palette

  - Modifying the Scale of the Text

- Inserting Table in the Drawing

  - Table style Area

  - Insert options Area

  - Insertion behaviour Area

  - Column and row settings Area

  - Set cell styles Area

- Creating a New Table Style

  - Starting table Area

  - General Area

  - Cell styles Area

  - Setting a Table Style as Current

  - Modifying a Table Style

  - Modifying Tables

  - Substituting Fonts

  - Specifying an Alternate Default Font

  - Creating Text Styles

  - Determining Text Height

  - Creating Annotative text

## **8: BASIC DIMENSIONING, GEOMETRIC DIMENSIONING, AND TOLERANCING**

- Need for Dimensioning

- Dimensioning in AutoCAD

- Fundamental Dimensioning Terms

  - Dimension Line

- Dimension Text
- Arrowheads
- Extension Lines
- Leader
- Centre Mark and Centrelines
- Alternate Units
- Tolerances
- Limits
- Associative Dimensions
- Definition Points
- Annotative Dimensions
- Selecting Dimensioning Commands
- Using the Ribbon and the Toolbar
- Using the Command Line
- Dimensioning a Number of Objects Together
- Creating Linear Dimensions
  - DIMLINEAR Command Options
  - Creating Aligned Dimensions
  - Creating Arc Length Dimensions
  - Creating Rotated Dimensions
  - Creating Baseline Dimensions
  - Creating Continued Dimensions
  - Creating Angular Dimensions
  - Dimensioning the Angle between Two Nonparallel Lines
  - Dimensioning the Angle of an Arc
- Angular Dimensioning of Circles
  - Angular Dimensioning based on Three Points
  - Creating Diameter Dimensions
  - Creating Radius Dimensions
  - Creating Jogged Linear Dimensions
  - Creating Ordinate Dimensions
  - Maintaining Equal Spacing between Dimensions
- Creating Inspection Dimensions
  - Inspection Label
  - Dimension Value
- Working with True Associative Dimensions
  - Inspection Rate
  - Removing the Dimension Associatively
  - Converting a Dimension into a True Associative Dimension
  - Drawing Leaders
  - Multileader
    - Adding leaders to existing Multileader
    - Removing Leaders from Existing Multileader
- Aligning Multileaders

- Distribute
- Make leader segments Parallel
- Specify Spacing
- Use current spacing
- Geometric Dimensioning and Tolerance
- Geometric Characteristics and Symbols
- Adding Geometric Tolerance
  - Feature Control Frame
  - Geometric Characteristics Symbol
  - Tolerance Value and Tolerance Zone Descriptor
  - Material Condition Modifier
  - Datum
- Complex Feature Control Frames
  - Composite Position Tolerance
  - Projected Tolerance Zone
- Creating Annotative Dimensions, Tolerances, Leaders, and Multileaders

## **9: EDITING DIMENSIONS**

- Editing Dimensions Using Editing Tools
  - Editing Dimensions by Stretching
  - Editing Dimensions by Trimming and Extending
  - Flipping Dimension Arrow
  - Modifying the Dimensions
  - Editing the Dimension Text
  - Updating Dimensions
  - Editing Dimensions with Grips
  - Editing Dimensions using the Properties Palette
  - Properties Palette (Dimension)
  - Properties Palette (Multileader)
  - Model Space and Paper Space Dimensioning

## **10: DIMENSION STYLES, MULTILEADER STYLES, AND SYSTEM VARIABLES**

- Using Styles and Variables to Control Dimensions
- Creating and Restoring Dimension Styles
- New Dimension Style dialog box
- Controlling the Dimension Text Format
- Fitting Dimension Text and Arrowheads
- Formatting Primary Dimension Units
- Formatting Alternate Dimension Units
- Formatting the Tolerances
- Creating and Restoring Multileader Styles
- Modify Multileader Style dialog box

## **11: MODEL SPACE VIEWPORTS, PAPER SPACE VIEWPORTS, AND LAYOUTS**

Model Space and Paper Space/Layouts

Model Space Viewports (Tiled Viewports)

    Creating Tiled Viewports

Making a Viewport Current

Joining Two Adjacent Viewports

Paper space viewports (Floating Viewports)

    Creating Floating Viewports

    Creating Rectangular Viewports

    Creating Polygonal Viewports

    Converting an Existing Closed Object into a Viewport

Temporary Model Space

Editing Viewports

    Controlling the Display of Objects in Viewports

    Locking the Display of Objects in Viewports

    Controlling the Display of Hidden Lines in Viewports

    Clipping Existing Viewports

    Maximizing Viewports

    Inserting Layouts

    Inserting a Layout Using the Wizard

    Defining Page Settings

    Controlling the Display of Annotative Objects in Viewports

## **12: PLOTTING DRAWINGS**

Plotting Drawings in AutoCAD

Plotting Drawings Using the Plot Dialog Box

    Page setup Area

    Printer/plotter Area

    Paper size Area

    Number of copies Area

    Plot area

    Plot offset (origin set to printable area) Area

    Plot scale Area

    Plot style table (pen assignments) Area

    Shaded viewport options Area

    Plot options Area

    Preview

Adding Plotters

    The Plotter Manager Tool

Using Plot Styles

    Adding a Plot Style



## **13: HATCHING DRAWINGS**

Hatching

Hatch Patterns

Hatch Boundary

Hatching Drawings Using the Hatch Tool

Panels in the Hatch Creation Tab

Boundaries Panel

Pattern Panel

Properties Panel

Origin Panel

Options Panel

Match Properties

Setting the Parameters for Gradient Pattern

Creating Annotative Hatch

Hatching the Drawing Using the Tool Palettes

Drag and Drop Method

Select and Place Method

Hatching Around Text, Dimensions, and Attributes

## **14: WORKING WITH BLOCKS**

The Concept of Blocks

Advantages of Using Blocks

Drawing Objects for Blocks

Converting Entities into a Block

Inserting Blocks

Creating and Inserting Annotative Blocks

Block Editor

Adding Blocks in Tool Palettes

Drag and Drop Method

Modifying Existing Blocks in the Tool Palettes

Layers, Colours, Line types, and Line weights for Blocks

Nesting of Blocks

Creating Drawing Files using the Write Block Dialog Box

Exploding Blocks Using the XPLODE Command

Renaming Blocks

Deleting Unused Blocks

Editing Constraints to Blocks