

Autodesk AutoCAD: Beyond the Basics

Target Audience

This course is ideal for designers, drafters, and engineers who already know basic AutoCAD and want to advance their 2D drafting skills. It suits professionals in architecture, civil, and mechanical design aiming to improve productivity and prepare for Autodesk certification.

Course Objective

- Customize workspaces, ribbons, and palettes for efficient drafting.
- Use advanced selection, grip, and layer tools.
- Apply accurate positioning and construction techniques.
- Create and manage blocks, templates, and viewports.
- Use parametric constraints and external references for project control.

Course Outcome

- Work effectively with multiple drawings and layouts.
- Speed up drafting using aliases, shortcuts, and layer tools.
- Apply constraints and manage reusable blocks.
- Develop templates and maintain drawing standards.
- Produce professional, precise, and well-organized 2D drawings.

Course Outline: The course comprises **32-hours** of theory and demonstrations and is divided into **8** different chapters. Each chapter is designed with practical examples and guided exercises to reinforce learning and ensure a strong understanding of 3D cable and harness design concepts.



Chapter 1: Working Effectively with AutoCAD

1.1 Creating a Custom Workspace

- Docking and Hiding Palettes
- Setting Up the Ribbon
- Displaying the Ribbon
- Relocating Individual Panels
- Docking/Floating the Ribbon
- Hint: Tool Palette Groups
- **Practice 1a:** Set Up Workspaces

1.2 Using the Keyboard Effectively

- Command Aliases
- Shortcut Keys
- Function Keys
- **Practice 1b:** Use the Keyboard Effectively

1.3 Object Creation, Selection, and Visibility

- Object Creation (Add Selected)
- Selecting Similar Objects
- Object Selection Cycling
- Object Visibility (Isolate/Hide Objects)
- Setting Transparency
- **Practice 1c:** Object Creation, Selection, and Visibility

1.4 Working in Multiple Drawings

- File Tabs
- Switching Windows
- Floating Windows
- Appearance and Preview
- Shortcut Menu
- Toggle File Tabs Bar On/Off
- Selecting Drawings in the Application Menu

1.5 Copying and Pasting Between Drawings

- Cut to Clipboard
- Copy to Clipboard
- Paste from Clipboard



- Drag-and-Drop Copying
- Match Properties Across Drawings
- **Practice 1d:** Work in Multiple Drawings

1.6 Using Grips Effectively

- Changing the Base Point
- Copying with Grips
- Rotate and Scale with Reference Option
- Stretching Multiple Objects
- Converting to Arcs or Lines
- Grip Settings
- **Practice 1e:** Use Grips Effectively

1.7 Additional Layer Tools

- Changing Object Layer States
- Isolating Layers
- Changing an Object's Layer
- Modifying Layers
- Layer Walk
- **Practice 1f:** Use Layer Tools

Chapter 2: Accurate Positioning

2.1 Coordinate Entry

- Absolute Cartesian Coordinates (X, Y)
- Relative Cartesian Coordinates (@X, Y)
- Relative Polar Coordinates (@Distance<Angle)
- Notes on Coordinate Entry
- **Practice 2a:** Draw Using Coordinate Entry

2.2 Locating Points with Tracking

- Object Snap Tracking Review
- Temporary Track Point
- **Practice 2b:** Locate Points with Tracking (Mechanical)
- **Practice 2c:** Locate Points with Tracking (Architectural)**

2.3 Construction Lines



- Construction Lines
- Rays
- **Practice 2d:** Use Construction Lines

2.4 Placing Reference Points

- Creating Groups of Points
- **Practice 2e:** Place Points

Chapter 3: Projects – Productivity Tools

- Schematic Project: Purifier Unit
- Mechanical Project: 2 Views
- Architectural/Civil Project: Formal Garden
- Mechanical Project: Cover Plate
- Architectural Project: Addition
- Mechanical Project: Block
- Mechanical Project: Plate

Chapter 4: Parametric Drawing

4.1 Working with Constraints

4.2 Geometric Constraints

- Auto Constraining Objects
- Specifying Geometric Constraints
- Constraint Bars
- Modifying and Deleting Constraints
- Constraint Settings

4.3 Dimensional Constraints

- Modifying Dimensional Constraints
- Formulas in Constraints
- **Practice 4a:** Work with Constraints



Chapter 5: Working with Blocks

5.1 Creating Blocks

- Creating Local Blocks
- Block Settings
- Creating Drawing Files from Objects (WBlock)

5.2 Editing Blocks

- **Practice 5a:** Create and Edit Blocks

5.3 Removing Unused Elements

- **Practice 5b:** Purge

5.4 Adding Blocks to Tool Palettes

5.5 Modifying Tool Properties in Tool Palettes

- Modifying Tool Properties
- Redefining Blocks in Tool Palettes
- **Practice 5c:** Modify Tool Properties

Chapter 6: Projects – Creating and Organizing Blocks

- Mechanical Project: Control Panel
- Architectural Project: Furniture Layout
- Civil Project: Utility Layout

Chapter 7: Creating Templates

7.1 Why Use Templates?

- Drawing Standards

7.2 Controlling Units Display

- Drawing Limits

7.3 Creating New Layers

- Layer Properties Manager
- Other Layer Options

7.4 Adding Standard Layouts to Templates

- Page Setup Manager
- Setting Up Layouts in a Template

7.5 Saving Templates

- **Practice 7a:** Save a Template



Chapter 8: Working with Layouts

8.1 Creating and Using Named Views

8.2 Advanced Viewport Options

- Creating Viewports from Named Views
- Clipping Viewports

8.3 Layer Overrides in Viewports

- Overriding Layer Properties
- Freezing Layers in Viewports
- **Practice 8a:** Viewports and Named Views

8.4 Annotative Scale Features

- Modifying Annotative Object Scales
- **Practice 8b:** Annotative Scale Features

