Autodesk AutoCAD: Advanced Drafting and Productivity Tools

Target Audience

This course is designed for experienced AutoCAD users, including architects, engineers, and CAD professionals, who want to advance their skills in automation, collaboration, CAD management, and interface customization.

Course Objective

The course aims to equip learners with advanced techniques to enhance productivity in AutoCAD. It focuses on mastering dynamic blocks, attributes, sheet sets, CAD standards, and automation tools like macros and scripts for streamlined project workflows.

Course Outcome

Upon completion, participants will be able to create intelligent and dynamic drawings, manage collaborative projects using sheet sets and CAD standards, automate repetitive tasks, and customize the AutoCAD interface for efficient professional drafting and documentation.

Course Outline: The course comprises **56-hours** of theory and demonstrations and is divided into **19** 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: Introduction

- Course Overview and Learning Objectives
- Introduction to Advanced AutoCAD Features
- **Practice 1a:** Drawing, Editing, and Dimensioning a Cross-section

Chapter 2: Advanced Text Objects

- Annotation Scale Overview
  - Working with Annotative Styles
  - Viewing Annotative Objects at Different Scales
  - Annotation Scale in Model Space
  - Modifying Annotative Object Scales
  - **Practice 2a:** Annotation Scale
- Using Fields
  - Updating and Modifying Fields
  - Field Settings
  - Object Fields
  - Fields in Blocks and Attributes
  - **Practice 2b:** Fields
  - **Practice 2c:** Object Fields
- Controlling Draw Order
  - Draw Order and Hatching
  - Masking Annotation Objects
  - Adding a Wipeout
  - **Practice 2d:** Controlling Draw Order

Chapter 3: Working with Tables

- Working with Linked Tables
  - Using the Data Link Manager
  - Updating Table Links
- Creating Table Styles
  - Table Style Options
  - Cell Style Options
  - **Practice 3a:** Working with Tables

Chapter 4: Projects – Advanced Annotation

- Fields and Tables Project

Chapter 5: Dynamic Blocks

- Working with Dynamic Blocks
  - Inserting and Modifying Dynamic Blocks
  - Typical Dynamic Block Grips
  - **Practice 5a:** Insert and Modify Dynamic Blocks – Mechanical
  - **Practice 5b:** Insert and Modify Dynamic Blocks – Architectural
- Creating Dynamic Block Definitions
- Dynamic Block Authoring Tools
  - Block Editor Contextual Tab
  - Parameters and Actions
  - Parameter Sets and Constraints
  - Labeling Parameters and Testing Blocks
  - Construction Geometry and Block Tables
  - **Practice 5c:** Create Dynamic Block Definitions
  - **Practice 5d:** Create Dynamic Blocks with Constraints
- Additional Visibility Options

Chapter 6: Attributes

- Inserting Blocks with Attributes
  - Attribute Creation and Display Options
- Editing Attribute Values
  - Editing Single and Multiple Attributes
  - **Practice 6a:** Insert and Edit Attribute Values
- Defining Attributes
  - Attribute Definition and Association
  - **Practice 6b:** Define Attributes
- Redefining Blocks with Attributes
  - Updating and Managing Attributes
  - **Practice 6c:** Redefine Blocks with Attributes
- Extracting Attributes
  - **Practice 6d:** Extract Object Data to a Table

Chapter 7: Projects – Advanced Blocks and Attributes

- Dynamic Block Project – Desk Unit
- Mechanical Attribute Project – Amplifier
- Architectural Attribute Project – Door Schedule

Chapter 8: Output and Publishing

- Output for Electronic Review
  - Plotting and Exporting DWF/PDF Files
- Autodesk Design Review
  - Viewing and Managing Markups in AutoCAD
- Publishing Drawing Sets
  - **Practice 8a:** Review and Publish Drawing Sets
- Shared Views
  - Autodesk Viewer and Shared Views Palette
  - **Practice 8b:** Create Shared Views

Chapter 9: Other Tools for Collaboration

- eTransmit
  - Creating Transmittal Sets and Setups
  - **Practice 9a:** eTransmit
- Hyperlinks
  - Adding and Managing Hyperlinks in Drawings
  - **Practice 9b:** Hyperlinks
- Revision Clouds
  - Creating and Editing Revision Clouds
- Compare Drawings
  - Using the Compare Toolbar
  - **Practice 9c:** Compare Drawings

Chapter 10: Introduction to Sheet Sets

- Overview of Sheet Sets
  - Understanding the Sheet Set Manager
  - **Practice 10a:** Overview of Sheet Sets
- Creating Sheet Sets
  - Sheet Set Properties and Structure
- Creating Sheets in Sheet Sets
  - Organizing Sheets in Subsets
- Adding Views to Sheets

    - Sheet Views Tab and Tools
- Importing Layouts to Sheet Sets
    - Creating from Existing Layouts and Importing
    - **Practice 10b:** Create and Manage Sheet Sets

Chapter 11: Publishing and Customizing Sheet Sets

- Transmitting and Archiving Sheet Sets
- Publishing Sheet Sets
    - Publish to DWFx and Control Plot Output
    - **Practice 11a:** Transmit, Archive, and Publish Sheet Sets
- Customizing Sheet Sets
    - Creating Custom and Title Label Blocks
    - **Practice 11b:** Customize Sheet Sets

Chapter 12: Projects – Sheet Sets

- Sheet Set Project

Chapter 13: Managing Layers

- Working in the Layer Properties Manager
    - Display Columns and Layer Settings
    - **Practice 13a:** Layer Properties Manager
- Creating Layer Filters
    - Property and Group Filters
- Setting Layer States
    - Saving and Managing Layer States
    - **Practice 13b:** Layer Filters and States
    - **Practice 13c:** Mechanical Layer States

Chapter 14: CAD Standards

- CAD Standards Concepts
    - Creating and Configuring Standards Files
- Configuring Standards Plug-ins
- Checking Standards and Compliance
    - **Practice 14a:** Create, Configure, and Check Standards
- Layer Translator
    - Settings and Tools
    - **Practice 14b:** Layer Translator

Chapter 15: System Setup

- Options Dialog Box
  - Configuration and Management
  - **Practice 15a:** Options Dialog Box
- System Variables
  - Common Variables and Monitors
  - **Practice 15b:** System Variables
- Dynamic Input Settings
  - **Practice 15c:** Dynamic Input Settings
- Drawing Utilities
  - File Repair, Recovery, and Audit Tools
  - **Practice 15d:** Drawing Utilities
- Managing Plotters and Plot Styles
  - Add Plotters, Configure Editors, Color & Named Styles
  - **Practices 15e–15g:** Plotters and Plot Styles

Chapter 16: Introduction to Customization

- Why Customize?
  - Customization Guidelines and Options
- Creating a Custom Workspace
  - **Practice 16a:** Set Up Workspaces

Chapter 17: Customizing the User Interface

- Using the Customize User Interface (CUI) Dialog Box
- Customizing the Ribbon and Panels
- Customizing Quick Access Toolbars
- Customizing Menus and Shortcut Keys
- Keyboard Shortcuts and Mouse Buttons
  - **Practice 17a:** Customize AutoCAD

Chapter 18: Macros and Custom Routines

- Custom Commands and Macros
  - Creating Commands, Using Macros, Button Images
  - **Practice 18a:** Custom Command Macros
- Running Scripts
  - **Practice 18b:** Run Scripts
- Action Recorder and Macro Editing

    - Managing Action Macro Manager
    - Establishing Base Points and Playback Values
    - **Practice 18c:** Action Recorder
- Loading Custom Routines (AutoLISP)
    - Secure Load and APPLOAD Options
    - **Practice 18d:** Load and Run an AutoLISP Routine

Chapter 19: Cloud Collaboration and 2D Automation

- Connecting to the Cloud
    - Stay Connected Menu and Autodesk Account
- Share Drawings
    - Web and Mobile App Integration
    - **Practice A1:** Shared Drawings
- Trace Features
    - **Practice A2:** Create Trace in Shared Drawing
- Save to Web and Mobile
    - Navigation and Model Viewing
- Rendering in the Cloud
    - **Practice A3:** Work in the Cloud
- Attach Navisworks Files
    - Coordination Models and Integration
    - **Practice A4:** Attach Navisworks File