# Autodesk AutoCAD 2D Foundation Course

## Target Audience

This course is designed for students, engineers, architects, designers, drafters, CAD professionals, and technical staff who want to develop or enhance their 2D drafting skills using Autodesk AutoCAD. It is ideal for beginners as well as professionals seeking industry-standard drafting techniques for engineering, architectural, manufacturing, and construction projects.

## Course Objective

The objective of this course is to equip learners with the knowledge and practical skills required to create, edit, annotate, and print accurate 2D technical drawings using Autodesk AutoCAD. Participants will learn industry-standard drafting practices and develop professional documentation skills applicable to engineering, architecture, manufacturing, and construction projects.

## Course Outcome

- Create accurate 2D technical drawings using AutoCAD drafting tools.
- Edit and organize drawings using layers, object properties, and modification commands.
- Apply dimensions, annotations, and hatch patterns to produce professional documentation.
- Create layouts, viewports, and generate print-ready drawings to industry standards.
- Develop complete 2D engineering and architectural drawings suitable for design, manufacturing, and construction workflows.

**Course Outline:** The course comprises **32-hours** of theory and labs and is divided into **14** different chapters. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

## Chapter 1. Getting Started with AutoCAD

Starting the Software
Creating a Drawing File
Opening an Existing Drawing File
Viewing your Drawing
User Interface (2D and 3D Display)
Setting up the Workspace (2D or 3D) and setting up the Limits
Setting up the Units
Mouse Controls
Selection Methods
Working with Commands
Understanding Coordinate System
Saving Your Work

## Chapter 2. Basic Drawing and Editing Commands

Drawing Lines (Vertical, Horizontal and Inclined Line)
Drawing Rectangles
Drawing Circles
Erasing Objects
Undo and Redo Actions

## Chapter 3. Drawing Precision in AutoCAD

Using Running Object Snaps
Using Object Snap Overrides
Object Snap Tracking

## Chapter 4. Advanced Object Types

Drawing Arcs
Drawing and Editing Polylines
Drawing Polygons
Drawing Ellipses
Drawing Splines
Drawing Construction lines, Rays, Points, and Multiple Points
Applying Hatches, Gradient Hatches and Editing Hatches

## Chapter 5. Making Changes in Your Drawing

Selecting Objects for Editing
Moving Objects
Copying Objects
Rotating Objects

Scaling Objects
Mirroring Objects
Editing with Grips

## Chapter 6. Advance Editing Commands

Trimming and Extending Objects
Stretching Objects
Creating Fillets and Chamfers
Offsetting Objects
Creating Arrays of Objects
Using Explode Command
Using Join Command
Using Align Command
Using Break and Break at point Command
Using Overkill Command
Using Divide, Measure, and Wipe-out Command
Using Region and Boundary Command

## Chapter 7. Analyzing Model and Object Properties

Working with Object Properties
Measuring Objects

## Chapter 8. Organizing Your Drawing with Layers

What are Layers?
Layer States
Creating New Layers
Changing an object ‘s Layer
Using Match Layer and Layer Walk tools
Using Layer Isolate, UnIsolate, and Merge tools
Using Layer Translator

## Chapter 9. Working with Blocks

What are Blocks
Creating Blocks
Inserting Blocks
Editing Blocks
Adding Blocks to Tool Palettes
Inserting Blocks using the Tool Palettes
Working with Dynamic Blocks
Inserting Blocks using the Design Center

## Chapter 10. Working with Text Annotations

Adding Single line text
Adding Multiline text
Formatting Multiline text
Adding Notes with leaders to your drawing
Creating Tables

## Chapter 11. Adding Dimensions

Dimensioning concepts
Adding Linear Dimensions
Adding Radial and Angular Dimensions
Editing Dimensions
Using Measure tool to find dimension of an object
Using Dimjogline and Break line tool

## Chapter 12. Working with Templates and Layout

Why use Templates
Creating some new drawings with Template
Working in Layout
Creating Layouts
Creating Layout Viewports
Advance Viewport options
Creating and using named views
Layer overrides in viewports

## Chapter 13. Parametric Drawing

Working with Constraints
Geometric Constraints
Dimensional Constraints

## Chapter 14. Printing Your Drawing

Printing Concepts
Printing Layouts
Print and Plot Settings