Autodesk AutoCAD User

Target Audience

The Autodesk AutoCAD Certified User exam demonstrates competency in computer- aided design (CAD). The exam covers the basic use of the AutoCAD software as well as basic drafting and design techniques. An individual earning this certification has approximately 150 hours of instruction and hands-on experience with the product, has proven competency at an industry entry-level, and is ready to enter the job market.

Course Objective

This course is designed to build foundational skills in 2D drafting using Autodesk AutoCAD. Participants will learn to create, modify, and manage design drawings efficiently through hands-on exercises and real-world workflows. The curriculum is aligned with the objectives of the **Autodesk AutoCAD Certified User** certification, preparing learners to confidently demonstrate their skills and succeed in entry-level design and drafting roles.

Course Outcome

1. **Proficiency in Drafting Tools:** Gain expertise in using AutoCAD's 2D tools to create accurate designs and technical drawings.
2. **Efficient Workflow Management:** Learn to organize designs with layers, annotations, and templates for streamlined project execution.
3. **Industry-Ready Skills:** Develop practical skills aligned with real-world applications in architecture, engineering, and construction.
4. **Certification Preparedness:** Achieve the knowledge and confidence to pass the Autodesk AutoCAD Certified User exam.

Course Outline: The course comprises **40-hours** of theory and labs and is divided into **12** different chapters. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Chapter 1. Introduction to AutoCAD

Installing AutoCAD

Getting Started with AutoCAD
Starting a New Drawing File
Working with Various Components of a Drawing

- Application Menu
- Quick Access Toolbar
- Ribbon
- InfoCenter
- Command Line Window
- ViewCube
- Navigation Bar
- Status Bar

Starting a New Drawing File by using the Create New Drawing dialog box

- Starting a New Drawing file from Scratch
- Starting a New Drawing file by using a Template

Working with Workspaces

- Switching between Workspaces

Saving a Drawing File
Opening a Drawing File
Sharing a Drawing File

Chapter 2. Drawing Tools

Working with Dynamic Input
Working with Draft Settings
Working with Ortho Mode
Working with Polar Tracking
Working with Object Snap

- Working with Object Snap Tracking
- Working with Object Snap Override

Working with Design Center
Working with Tool Palette

Chapter 3. Creating Drawings - I

Setting up Drawing Units
Setting Drawing Limits
Specifying Grid and Snap Settings

Understanding Coordinate Systems
- Cartesian Coordinate System
- Polar Coordinate System

Creating a Drawing
- Drawing a Line
- Drawing a Circle
- Drawing an Arc

Cancelling, Erasing and Restoring Objects

Navigating 2D Drawings
- Zoom
- Zoom Realtime
- Zoom All
- Zoom Window
- Zoom Previous
- Zoom Extents
- Zoom In
- Zoom Out
- Pan

Chapter 4. Creating Drawings - II

Drawing a Rectangle
- Drawing a Rectangle by Specifying Diagonally Opposite Corners
- Drawing a Rectangle by Specifying its Area and One Side
- Drawing a Rectangle by Specifying Dimensions
- Drawing a Rectangle at an Angle
- Drawing a Rectangle with Chamfer
- Drawing a Rectangle with Fillets
- Drawing a Rectangle with Elevation
- Drawing a Rectangle with Thickness
- Drawing a Rectangle with Width

Drawing a Polygon
- Inscribed Polygon
- Circumscribed Polygon

Drawing a Polyline
- Drawing a Polyline with Line Segments
- Drawing a Polyline with Line and Arc Segments
- Drawing a Polyline with Width
- Drawing a Polyline with Halfwidth

Drawing an Ellipse

- Drawing an Ellipse by Using the Axis, End Tool
- Drawing an Ellipse by Using the Center Tool
- Drawing an Elliptical Arc

Drawing a Spline

- Drawing a Spline by Using the Spline Fit Tool
- Drawing a Spline by Using the Spline CV Tool

Drawing Donuts
Drawing Construction and Ray lines

- Drawing Construction Lines
- Drawing Ray Lines

Drawing Points and Defining Point Style/Size

- Drawing Reference Points
- Defining the Point Style and Point Size

Creating the Hatches
Creating the Gradients

Chapter 5. Working with Layers

Working with Layers and Assigning Objects to a Layer

- Creating a New Layer
- Setting the Current Layer
- Assigning Color to a Layer
- Assigning Linetype to a Layer
- Assigning Lineweight to a Layer
- Turning a Layer On or Off
- Freezing a Layer
- Locking or Unlocking a Layer
- Deleting a Layer
- Setting Transparency of a Layer
- Restricting a Layer from Plotting
- Freezing a Layer in New Viewports
- Freezing the New Layer in All Viewports
- Toggle Override Highlight

Chapter 6. Modifying and Editing Drawings - I

Working with Object Selection Methods

- Window Selection Method
- Cross Window Selection Method

Invoking a Selection Method within a Command

- Window Selection Method
- Cross Window Selection Method

- All Selection Method
- Cross Polygon Selection Method
- Window Polygon Selection Method
- Fence Selection Method
- Last Selection Method

Trimming Drawing Entities
Extending Drawing Entities
Working with Arrays

- Creating a Rectangular Array
- Creating a Polar/Circular Array
- Creating a Path Array

Mirroring Drawing Entities
Filleting Drawing Entities
Square Corners (Zero Radius)
Chamfering Drawing Entities

- Creating a Chamfer Using the Distance Distance Method
- Creating a Chamfer Using the Angle Distance Method

Offsetting Drawing Entities
Moving Drawing Objects
Copying Drawing Objects
Rotating Drawing Objects
Scaling Drawing Objects
Stretching Drawing Objects
Lengthening Drawing Objects

- Lengthening an Object by Specifying Delta Value
- Lengthening an Object by Specifying Percentage
- Lengthening an Object by Specifying Total Length
- Lengthening an Object by Dragging

Erasing Drawing Objects
Join In AutoCAD
Explode AutoCAD
Group/UnGroup in AutoCAD
Creating 2D Isometric Drawings

- Switch between standard isometric planes (ISODRAFT)
- Use drawing and tracking tools that align with the corresponding isometric axes

Chapter 7. Working with Dimensions and Dimension Styles

Working with Components of a Dimension
Creating a New Dimension Style
Modifying an Existing Dimension Style

Overriding a Dimension Style
Applying Dimensions
- Applying a Linear Dimension
- Applying an Aligned Dimension
- Applying an Angular Dimension
- Applying an Arc Length Dimension
- Applying a Radius Dimension
- Applying a Diameter Dimension
- Applying a Jogged Radius Dimension
- Applying a Jogged Linear Dimension
- Applying an Ordinate Dimension
- Applying Baseline Dimensions
- Applying Continue Dimensions
- Applying Multiple Dimensions

AutoCAD Multileader Operations
- Multileader Style
- Multileader Operations
- Block Multileader

Chapter 8. Editing Dimensions and Adding Text

Editing Dimensions by using DIMEDIT Command
- Specifying the New Dimension Text/Value
- Rotating the Dimension Text
- Restoring the Dimension Text to Original Position
- Changing the Oblique Angle of Extension Lines

Editing Dimensions by using DIMTEDIT Command
Editing Dimensions by using DDEDIT Command
Editing Dimensions by using Dimension Grips
- Changing the Position of Dimension Text
- Changing the Space between Dimension Line and Object
- Changing the Position of Extension Lines

Editing Dimensions by using PROPERTIES Palette
Editing Dimensions by using Editing Tools
- Editing Dimensions by using the Trim Tool
- Editing Dimensions by using the Extend Tool
- Editing Dimensions by using the Stretch Tool

AutoCAD Table
Adding Text/Notes
- Creating and Modifying a Text Style

- Adding Text by using the Single Line Tool
- Adding Text by using the Multiline Text Tool

Editing Single line and Multiline Text
Converting Single line Text to Multiline Text

Chapter 9. Modifying and Editing Drawings - II

Editing Objects by using Grips

- Stretching Objects by using Grips
- Moving Objects by using Grips
- Rotating Objects by using Grips
- Scaling Objects by using Grips
- Mirroring Objects by using Grips

Editing Objects by using PROPERTIES Palette
Matching Properties of an Object
Identifying Coordinates of a Point

Chapter 10. Working with Blocks

Creating a Block
Inserting a Block into a Drawing
Creating a WBlock
Inserting a WBlock into a Drawing
Editing a Block
Making a Dynamic Block

Chapter 11. Working with Layouts

Getting Started with Paper Space/Layout
Understanding Different Components of a Layout
Setting up the Sheet/Paper Size for a Layout
Adding, Renaming, and Deleting a Layout
Working with Viewports

- Editing a Viewport
- Deleting a Viewport
- Creating Viewports

Accessing the Model Space within a Viewport
Clipping a Viewport
Locking the Object Scale in a Viewport
Controlling the Display of Objects in a Viewport
Controlling Layers Properties for Viewports

- Viewport Freeze
- Viewport Color

Add Title Block to Layout
Switching to the Model Space
Creating Viewports in the Model Space

- Viewport Configuration
- Joining Two Viewports
- Restoring Viewports

Chapter 12. Printing and Plotting

Configuring a Plotter (Output Device)
Creating a Plot Style
Setting up a Default Plot Style
Plotting a Drawing