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## AutoCAD 3D

**2 Days**  
**12 AIA/CES**



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### Course Description

This hands-on course covers the fundamental tools necessary for making the transition from the 2D tools to the more advanced 3D functionality of AutoCAD and explores the main features of AutoCAD's advanced 3D modeling workspace.

The doors open at 8:45 a.m. Class begins at 9:00 a.m. and ends at 5:00 p.m. with two fifteen minutes breaks and a one hour lunch. We have bagels and coffee served in the morning upon arrival. A book and a certificate of completion are included in this fee.

### Objectives

The primary objective of this course is to teach students the fundamental concepts and workflows for creating 3D models using AutoCAD.

After completing this course, students will be able to:

- Understand 3D viewing techniques
- Work with simple and composite solids
- Create complex solids and surfaces
- Modify objects in 3D space
- Edit solids
- Create 2D drawings from 3D models
- Work with the User Coordinate System

### Who Should Attend

This course is designed for new users of AutoCAD

### Prerequisites

Before attending this course, students should have a working knowledge of the following:

- Proficient user of the AutoCAD 2D tools
- Drafting, design, or engineering principles.
- Microsoft Windows

# **Course Outline**

## **Concepts of Working in 3D**

- The 3D Modeling Workspace
- Using the 3D Viewing Tools
- Navigating within the 3D Model
- The User Coordinate System

## **Simple Solids**

- Working with Solid Primitives
- Solid Primitive Types
- Working with Composite Solids
- Working with Mesh Models

## **Creating Solids & Surfaces from 2D Objects**

- Complex 3D Geometry
- Extruded Solids and Surfaces
- Swept Solids and Surfaces
- Revolved Solids and Surfaces
- Lofted Solids and Surfaces
- NURBS Surfaces

## **Modifying in 3D Space**

- 3D Gizmo Tools
- Aligning Objects in 3D Space
- 3D Modify Commands

## **Advanced Solid Editing**

- Editing Components of Solids
- Editing Faces of Solids
- Fillets and Chamfers on Solids

## **Additional Editing Tools**

- Creating a Shell
- Imprinting Edges of Solids
- Slicing a Solid along a Plane
- Interference Checking
- Converting Objects to Surfaces
- Converting Objects to Solids

## **Chapter 7 Refining the View**

- Working with Sections
- Working with Cameras
- Managing Views in 3D
- Animating with ShowMotion
- Creating ShowMotion Shots
- Creating Animations

## **Chapter 8 Visualization**

- Creating Visual Styles
- Working with Materials
- Specifying Light Sources
- Rendering Concepts

## **Working Drawings from 3D Models**

- Creating Multiple Viewports
- 2D Views from 3D Solids
- Creating Technical Drawings with Flatshot
- 3D Model Import
- Automatic Model Documentation

## **Working with the User Coordinate System**

- UCS Basics
- UCS X, Y, and Z Commands
- UCS Multifunctional Grips
- Saving a UCS by Name

**Note:** The suggested course duration is a guideline. Course topics and duration may be modified by the instructor based upon the knowledge and skill level of the course participants.