AutoCAD 3D Drawing & Modeling

Course Length: 3 days

The AutoCAD 3D Drawing and Modeling training course introduces users who are proficient with the 2D commands in the AutoCAD® software to the concepts and methods of 3D modeling. The course provides a thorough grounding in the fundamentals of 3D and explores the main features of the advanced 3D Modeling workspace in the AutoCAD software.

Topics Covered

- 3D viewing techniques
- Working with simple and composite solids
- Creating complex solids and surfaces
- Modifying objects in 3D space
- Editing solids
- Creating sections, camera perspectives, and animations
- Working with point clouds
- Converting 3D objects
- Setting up a rendering with materials and lights
- Creating 2D drawings from 3D models
- Working with the User Coordinate System
- Set up a drawing for 3D Prints

Prerequisites

Before taking this course, students need to have a good working skill level in the AutoCAD software. A minimum of 80 hours of work experience with the AutoCAD software is recommended.
Training Guide Contents

Chapter 1: 3D Foundations
- 1.1 Why Use 3D?
- 1.2 Introduction to the 3D Modeling Workspace
- 1.3 Basic 3D Viewing Tools
- 1.4 3D Navigation Tools
- 1.5 Introduction to the User Coordinate System (UCS)

Chapter 2: Simple Solids
- 2.1 Working with Solid Primitives
- 2.2 Solid Primitive Types
- 2.3 Working with Composite Solids
- 2.4 Working with Mesh Models

Chapter 3: Working with the User Coordinate System
- 3.1 UCS Basics
- 3.2 UCS X, Y, and Z Commands
- 3.3 UCS Multi-functional Grips
- 3.4 Saving a UCS by Name

Chapter 4: Creating Solids & Surfaces from 2D Objects
- 4.1 Complex 3D Geometry
- 4.2 Extruded Solids and Surfaces
- 4.3 Swept Solids and Surfaces
- 4.4 Revolved Solids and Surfaces
- 4.5 Lofted Solids and Surfaces
- 4.6 NURBS Surfaces

Chapter 5: Modifying in 3D Space
- 5.1 3D Gizmo Tools
- 5.2 Aligning Objects in 3D Space
- 5.3 3D Modify Commands

Chapter 6: Advanced Solid Editing
- 6.1 Editing Components of Solids
- 6.2 Editing Faces of Solids
- 6.3 Fillets and Chamfers on Solids

Course description shown for AutoCAD 2019. Topics, curriculum, and/or prerequisites may change depending on software version.
Chapter 7: Additional Editing Tools

- 7.1 Creating a Shell
- 7.2 Imprinting Edges of Solids
- 7.3 Slicing a Solid along a Plane
- 7.4 Interference Checking
- 7.5 Converting Objects to Surfaces
- 7.6 Converting Objects to Solids

Chapter 8: Refining the View

- 8.1 Working with Sections
- 8.2 Working with Cameras
- 8.3 Managing Views in 3D
- 8.4 Animating with ShowMotion
- 8.5 Creating ShowMotion Shots
- 8.6 Creating Animations

Chapter 9: Point Clouds

- 9.1 Point Clouds

Chapter 10: Visualization

- 10.1 Creating Visual Styles
- 10.2 Working with Materials
- 10.3 Specifying Light Sources
- 10.4 Rendering Concepts

Chapter 11: Working Drawings from 3D Models

- 11.1 Creating Multiple Viewports
- 11.2 2D Views from 3D Solids
- 11.3 Creating Technical Drawings with Flatshot
- 11.4 3D Model Import
- 11.5 Automatic Model Documentation
- 11.6 3D Printing

Appendix A: Skills Assessment
Cancellation Policy

The following cancellation policy shall apply to all training engagements, Live Online, Consulting Services and Dedicated/Custom Training:

- Company reserves the right to reschedule or cancel the date, time and location of its class at any time. In the event that a Training Class is cancelled by Company, Customer is entitled to a full refund. Company shall not be responsible for any other loss incurred by Customer as a result of a cancellation or reschedule.
- For Customer cancellations when written notice is received (i) at least ten (10) business days in advance of the class, the Customer is entitled to a full refund of its payment or reschedule enrollment, (ii) less than ten (10) business days, Customer shall not be entitled to a refund, but shall receive a class credit to be used within three (3) months of the date of the original class.
- Student substitutions are acceptable with at least two (2) days prior notice to the class, provided substitution meets course prerequisites and is approved by Company's Training Coordinator (trainingcoordinator@rand.com)
- For all Training orders, cancellation notices must be submitted to trainingcoordinator@rand.com. Company is not responsible for any error in the delivery of the email notice. In the event of any reschedule of Consulting Services and/or Dedicated/Custom Training by Customer, Company will invoice Customer for all non-cancellable travel expenses.

To request more information or to see training locations, visit www.imaginit.com/contact-us.