# Autodesk **3ds Max** Training

V. 2017 Release

3ds Max provides a comprehensive 3D modeling, animation, and rendering solution.

## Course Description

In the field of architectural visualization, realism is the first goal that we strive to accomplish. This course is designed for architects and interior designers who want to acquire 3D computer visualization skills using 3ds MAX, a state of the art rapid modeling and visualization tool. In this course, trainees will gain a solid introduction to valuable modeling, lighting and texture mapping techniques that can be used to achieve realistic architectural renderings.

## Class and Lab Hours: 40 Hours

## Pre-requisites:

Basic knowledge of Windows operating system and Adobe Photoshop.

## Course Objectives:

Upon completion of the course, trainees/students will be able to:

- Understand the mechanics of 3ds Max
- Create 3d models using a variety of techniques
- Work with materials to texture your models
- Understand how to light a scene
- Create animations
- Stage a scene and understand cinematography

## Suggested Learning Approach

In this course, you will study individually or within a group of your peers. As you work on the course deliverables, you are encouraged to share ideas with your peers and instructor, work collaboratively on projects and team assignments, raise critical questions, and provide constructive feedback.

## Detailed Course Outline: Introduction topics

### Lesson 1: Getting to Know 3ds Max

- Touring the Interface
- Viewport Display and Labels
- Getting to Know the Command Panel
- Working with Objects
- Transforming Objects
- Copying an Object
- Understanding the Perspective Viewing Tools
- Using Multiple Viewports
- Setting the Project Folder
- Preferences
- Layer and Object Properties
- Units Setup

### Lesson 2: Introducing 3ds Max Objects

- Understanding Standard Primitives
- Adjusting Objects' Parameters
- Modeling Standard Primitives with Modifiers
- Understanding Extended Primitives
- Using Various Modifiers
- Using the Modifier Stack Tools
- Making Clones
- Working with Groups
- Reference Coordinate Systems and Transform Centers

### Lesson 3: Creating Shapes with Splines

- Drawing using Splines
- Lathing a Spline
- Modifying a Shape Using Sub-object Levels
- Flipping Surface Normals
- 3D Modeling from 2D Objects
- Combining and Extruding Splines
- Using Snaps for Precision
- Introducing Other Spline Types
- Editing Splines
- The Sweep Modifier

### Lesson 4: Poly Modeling

- Polygon Modeling Techniques
- Using Graphite Modeling Tools
- Extrude, Chamfer
- Symmetry Mirror Modeling
- Creating buildings using modifiers
- Working with XRefs
- Designing a table and chair
- Designing a house using box

### Lesson 5: Working with External Design Data

- Importing AutoCAD Plans into 3ds Max
- Extruding the Walls

### Lesson 6: Creating AEC Objects

- Creating a Parametric Wall
- Adjusting the Wall's Parameters
- Adding Doors and Windows to Walls
- Creating a Parametric Window
- Creating Stairs
- Creating Foliage

### Lesson 7: Organizing and Editing Objects

- Naming Objects
- Organizing Objects by Layers
- Setting Up Layers
- Assigning Objects to Layers
- Assigning Color to Layers
- Lofting an Object
- Lofting a Shape Along a Path
- Using Different Shapes Along the Loft Path
- Extruding with the Sweep Modifier
- Aligning Objects

### Lesson 8: Light and Shadow

- Understanding the Types of Lights
- Photometric Light
- Exposure Control
- Daytime Lighting
- Adding a Spotlight to Simulate the Sun
- Rendering a Viewd

## Lesson 9: Light and Shadow

- Understanding Bitmap Texture Maps
- Diffuse Color Maps
- Understanding Surface Properties
- Adding Materials to Objects
- Understanding Material Libraries
- Editing Materials
- Using Bump Maps
- Understanding Mapping Coordinates
- Adjusting the UVW Mapping Gizmo
- Assigning Materials to Parts of an Object
- Creating a Multi/Sub-Object Material

## Lesson 10: Using the 3ds Max Camera

- Understanding the 3ds Max Camera
- Adding a Camera
- Editing the Camera Location with the Viewport Tools
- Setting Up an Interior View
- Creating an Environment
- Working with Walkthrough-Assistant

## Lesson 11: Creating Animations

- Using Animation controls
- Using Keyframe animation
- Bouncing a Ball
- Adding Camera Motion
- Adjusting the Camera Path
- Creating Preview Animation
- Compressing and Expanding Time
- Rendering the Animation

## Lesson 12: Mental Ray Concepts

- Understanding Mental Ray
- Understanding Global Illumination
- Understanding Final Gather
- Assigning the Mental Ray Renderer
- Using the Rendered Frame Window Controls

## Lesson 13: Gamma Correction

- Understanding Gamma and Linear Workflow
- Applying gamma correction

## Lesson 14: Materials

- Understanding Autodesk materials
- Understanding Arch & Design materials
- Creating various materials

## Lesson 15: Rendering

- Improving Rendering Quality
- Rendering an Exterior Scene
- Rendering an Interior Scene

## Lesson 16: VRay Introduction

- What is VRay and how to setup VRay
- VRay Image Saving Options

## Lesson 17: Global Illumination in VRay

- Irradiance Map
- Light Cache
- Quasi Monte Carlo/ Brute Force
- Environmental Lighting

## Lesson 18: Image Sampling

- Fixed
- Adaptive DMC

## Lesson 19: VRay Lights

- VRayLight
- VRayAmbientLight
- VRayIES
- VRay Sun

## Lesson 20: VRay Camera

- VRayDomeCame
- VRayPhysicaCam
- Shutter Speed

## Lesson 21: VRay Materials

- VRay2SidedMtl
- VRayMtl
- VRayFastSSS2
- VRayMtlWrapper

## Lesson 22: Rendering Scenes

- Rendering an interior scene using V-Ray
- Rendering an exterior scene using V-Ray