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Syllabus

: Architectural Visualization using Autodesk

3ds Max 2019 and V- Ray NEXT

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**,

Course Objectives

1. Understand the mechanics of 3ds Max

2. Create 3d models using a variety of techniques

3. Work with materials to texture your models

4. Understand how to light a scene

5. Create animations

6. Stage a scene and understand cinematography

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Detailed Course Outline

Unit Heading

1. Getting to Know 3ds Max

Unit Topics

- Touring the Interface
- The Viewports
- Getting to Know the Command Panel
- Working with Objects
- Transforming Objects
- Copying an Object
- Understanding the Perspective Viewing Tools
Using Multiple Viewports

2. Introducing 3ds Max Objects

- Understanding Standard Primitives
- Adjusting Objects' Parameters
- Accessing Parameters
- Modeling Standard Primitives with Modifiers
- Using the Modifier Stack Tools
- Making Clones That Share Properties
- Using Various Modifiers
- Understanding Extended Primitives
- Working with Groups

3. Creating Shapes with Splines

- Drawing using Splines
- Lathing a Spline
- Modifying a Shape Using Sub-object Levels
- Creating Thickness with a Spline
- Combining and Extruding Splines
- Introducing Other Spline Types
Editing Splines

4. Editing Meshes and Creating Complex Objects

- Polygon Modeling Techniques
- Using Graphite Modeling Tools

Creating buildings using modifiers

5. Working with External Design Data

- Importing AutoCAD Plans into 3ds Max

Extruding the Walls

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

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7. Light and Shadow with Vray

- Understanding the Types of Lights
- Adding a Spotlight to Simulate the Sun
- Rendering a View
- Adding Shadow Effects

Softening Shadow Edges

8. *Shading and Texturing with Vray*

- 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
  - Assigning Materials to Parts of an Object
- Adjusting the UVW Mapping Gizmo

  Creating a Multi/Sub-Object Material

9. *Using the 3ds Max with vray 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

10. 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

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11. Materials

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

12. Rendering

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

13. VRay Introduction

- What is VRay and how to setup VRay

  VRay Image Saving Options

20. VRay Camera

- VRayDomeCame

  - VRayPhysicaCam

  Shutter Speed

21. VRay Materials

- VRay2SidedMtl

- VRayMtl

- VRayFastSSS2

  VRayMtlWrapper

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22. Rendering Scenes

- Rendering an interior scene using V-Ray

Rendering an exterior scene using V-Ray

14. Global Illumination in VRay

- *Irradiance Map*
  - *Light Cache*
- *Quasi Monte Carlo/ Brute Force*

Environmental Lighting

15. Image Sampling

- *Fixed*
- *Adaptive DMC*

Adaptive Subdivisions

19. VRay Lights

- *VRayLight*
- *VRayAmbientLight*
- *VRayIES*

VRay Sun

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