



3D Modeling, Animation & Rendering using Autodesk

3DS Max (Duration: 80 Hrs)

Course Curriculum

Chapter 1: Introduction to Autodesk 3ds Max

- a. Overview
- b. Visualization Workflow
- c. The Autodesk 3ds Max Interface
- d. File Commands
- e. Create New Scenes
- f. Open and Save Files
- g. Preferences
- h. Setting the Project Folder
- i. Configure Paths
- j. Display Drivers
- k. Viewport Display and Labels
- l. General Viewport
- m. Point Of View
- n. Shading Viewport
- o. Per-View Preference
- p. Workshops

Chapter 2: Autodesk 3ds Max Configuration

- a. Viewport Navigation
- b. Viewport Configuration and Settings
- c. Object Selection Methods
- d. Units Setup
- e. Layer and Object Properties
- f. Display Panel
- g. Workshops

Chapter 3: Assembling Project Files

- a. Data Linking and Importing
- b. Merging Autodesk 3ds Max Scene Files
- c. Civil View
- d. Linking Files
- e. Linking DWG Files
- f. Linking FBX and RVT Files
- g. Manage Links Options
- h. File Link Settings: DWG Files
- i. File Link Settings: Revit Files (RVT or FBX)
- j. References

- k. External References (XRef)
- l. Data Management and Asset Tracking
- m. Workshops

Chapter 4: Basic Modeling Techniques

- a. Model with Primitives
- b. Modifiers and Transforms
- c. Sub-Object Mode
- d. Working in Sub-Object Mode
- e. Geometric Edits through Sub-objects
- f. Geometric Sub-Objects
- g. Smoothing
- h. Caddy Display for Edit Poly Modifier
- i. Reference Coordinate Systems and Transform Centers
- k. Cloning and Grouping
- l. Polygon Modeling Tools in the Ribbon
- m. Statistics in Viewport
- n. Workshops

Chapter 5: Modeling From 2D Objects

- a. 3D Modeling from 2D Objects
- b. The Lathe Modifier
- c. 2D Booleans
- d. The Extrude Modifier
- e. 3D Boolean Operations
- f. Using Snaps for Precision
- g. The Sweep Modifier
- h. Sweep Parameters
- i. Workshops

Chapter 6: Materials

- a. Understanding Materials and Maps
- b. Material Shaders
- c. Managing Materials
- d. General Materials
- e. Physical Materials
- f. Multi/Sub- Object Materials
- g. Additional General Materials
- h. Scanline Materials
- i. Autodesk Materials
- j. Assigning Maps to Materials
- k. Opacity, Bump, and Reflection Mapping
- l. Opacity Mapping
- m. Bump Mapping
- n. Reflection Mapping
- o. Arnold Materials
- p. The Material Explorer
- q. Scene Converter
- r. Workshops

Chapter 7: Mapping Coordinates and Scale

- a. Mapping Coordinates
- b. Mapping Controls in Slate Material Editor
- c. MapScaler Modifier
- d. UVW Map Modifier
- e. Mapping Scale
- f. Explicit Map Scaling
- g. Continuous Map Scaling
- h. Spline Mapping
- i. Workshops

Chapter 8: Introduction to Lighting

- a. Local vs. Global Illumination
- b. Default Illumination
- c. Local Illumination
- d. Global Illumination
- e. Types of Lights
- f. Standard Lighting
- g. Common Parameters
- h. Types of Standard Lights
- i. Omni Lights
- j. Spotlights
- k. Directional
- l. Lights
- m. Fill Lights
- n. Skylight
- o. Shadow Types
- p. Common Shadow Parameters
- q. Shadow Map Parameters
- r. Ray Traced Shadows
- s. Advanced Ray-Traced Shadows
- t. Workshops

Chapter 9: Lighting and Cameras

- a. Photometric Light Objects
- b. Photometric Light Types
- c. Templates Rollout
- d. General Parameters Rollout
- e. Distribution (Photometric Web) Rollout
- f. Shape/Area Shadows Rollout
- g. Intensity/Color/Attenuation Rollout
- h. Arnold Lights
- i. Cameras
- j. Physical Camera
- k. Target and Free Camera Parameters
- l. Background Images
- m. Aspect Ratio
- n. Safe Frames

Chapter 10: Exposure Control, Daylight, and Rendering

- a. Exposure Control
- b. Exposure Control Methods
- c. Logarithmic Exposure Control Parameters
- d. Physical Camera Exposure Control
- e. Daytime Lighting
- f. Sun Positioner Daylight System
- g. Sunlight and Skylight System
- h. Image Based Lighting
- i. Rendering Options
- j. Common Options
- k. Common Tab
- l. Renderer Tab
- m. Arnold Renderer
- n. Arnold Renderer Tab
- o. System Tab
- p. Archive Tab
- q. Diagnostics Tab
- r. AOV Settings Tab
- s. Scanline Renderer
- t. Single vs. Double-Sided in Scanline Rendering
- u. ART Renderer
- v. State Sets
- w. The Print Size Wizard
- x. Workshops

Chapter 11: Animation

- a. Animation and Time Controls
- b. Time Configuration
- c. Progressive Display and Adaptive Degradation
- d. Walkthrough Animation
- e. Animation Output
- f. Workshops

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