Autodesk Revit Architecture with Drafting & Enscape Visualization

Target Audience

This course is designed for professionals and students in the Architecture, Engineering, and Construction (AEC) industry who want to develop expertise in Building Information Modeling (BIM), drafting, and real-time architectural visualization using Autodesk Revit and Enscape. It is suitable for:

- Architecture students and fresh graduates
- Architects and architectural designers
- Interior designers and visualization artists
- Civil engineers and BIM professionals
- CAD draftsmen transitioning to BIM workflows
- Construction and project coordination professionals

Course Objective

The objective of this course is to provide participants with comprehensive knowledge and practical skills in Autodesk Revit Architecture, architectural drafting, and Enscape visualization workflows. The course focuses on developing industry-ready capabilities for creating BIM models, construction documentation, realistic renderings, walkthroughs, and presentation-ready architectural projects.

Course Outcome

After successful completion of the course, participants will be able to:

- Navigate and work confidently in Autodesk Revit Architecture
- Create accurate architectural models including walls, floors, roofs, stairs, and site components
- Develop professional construction documentation and drafting sheets
- Produce architectural floor plans, elevations, sections, schedules, and detailed drawings
- Create realistic renderings and real-time visualizations using Enscape
- Execute complete architectural design-to-visualization workflows using industry-standard tools

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Course Outline: The course comprises **40-hours** of theory and labs and is divided into **17** different chapters. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Chapter 1. Introduction to Autodesk Revit for Architecture

Introduction
Autodesk Revit as a Building Information Modeler
Basic Concepts and Principles

- Understanding the Parametric Building Modeling Technology
- Terms Used in Autodesk Revit
- Creating a Building Model using Parametric Building Elements
- Visibility/Graphics Overrides, Scale, and Detail Level
- Extracting the Project Information
- Creating an Architectural Drawing Set
- Creating an Unusual Building Geometry
- Flexibility of Creating Special Elements
- Creating Structural Layouts
- Working on Large Projects
- Working in Large Teams and Coordinating with Consultants

Starting Autodesk Revit
User Interface

- Invoking Tools
- Title Bar
- Ribbon
- Status Bar
- View Control Bar
- Options Bar
- Type Selector
- Drawing Area
- Project Browser
- Keyboard Accelerators
- Properties Palette

Dialog Boxes
Multiple Document Environment
Interoperability of Autodesk Revit
Building Information Modeling and Autodesk Revit

Autodesk Revit Help
- Using the Revit Help

Worksharing Using Revit Server
Autodesk Construction Cloud

Chapter 2. Starting an Architectural Project

Introduction
Starting a New Architectural Project
Project Units
- Angle Unit
- Area Unit
- Length Unit
- Mass Density Unit
- Slope Unit
- Speed Unit
- Time Unit
- Volume Unit
- Currency Unit

Snaps Tool
- Dimension Snaps Area
- Object Snaps Area
- Temporary Overrides Area

Saving a Project
- Saving the Project File
- Using the Save Tool

Configuring Global Settings
- General Tab
- User Interface Tab
- Graphics Tab
- Hardware Tab
- File Locations Tab
- Rendering Tab
- Check Spelling Tab
- Steering Wheels Tab
- ViewCube Tab
- Macros and Cloud Model Tab

Closing a Project
Exiting Revit

Opening an Existing Project
- Opening an Existing Project Using the Open Tool

Model Display Tools
- Using the Zoom Tools
- Using the Orient Options
- Navigation Tools
- Other Display Options

Chapter 3. Placing Architectural Walls

Introduction
Creating a Building Project
- Sequence of Creating a Building Model
- Understanding Wall Types
- Creating Architectural Walls

Creating Slanted Walls
Creating Tapered Walls
Working With Stacked Walls
- Creating a Stacked Wall

Adding Interior Walls
Adding Wall Sweeps and Reveals
- Wall Sweeps
- Wall Reveals

Chapter 4. Using Basic Building Components-I

Introduction
Adding Doors in a Building Model
- Adding Doors
- Understanding Door Properties
- Adding a Door to a Wall
- Adding a Door to a Slanted Wall

Adding Windows to a Building Model
- Adding Windows
- Understanding Window Properties
- Adding a Window to a Wall
- Adding a Window to a Slanted Wall
- Adding a Window to a Tapered Wall

Doors and Windows as Wall Openings
Openings in the Wall

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Chapter 5. Using the Editing Tools

Introduction
Creating a Selection Set

- Selecting Multiple Elements
- Isolating Elements Using the Selection Box
- Selecting Elements Using the Advanced Tools
- Restoring the Selection
- Using the Filter tool

Moving and Copying Elements

- Moving the Elements by Changing the Temporary Dimensions
- Moving the Elements by Dragging
- Moving the Elements by Dragging the End-Joint Components
- Moving the Elements by Selecting and Dragging
- Using the Move Tool
- Using the Copy Tool

Trimming and Extending Elements

- Using the Trim/Extend to Corner Tool
- Using the Trim/Extend Single Element Tool
- Using the Trim/Extend Multiple Elements Tool

Cutting and Pasting Elements

- Cutting Elements
- Copying Elements to the Clipboard
- Pasting Elements from the Clipboard

Rotating Elements
Mirroring Elements

- Mirroring Elements using the Mirror - Pick Axis Tool
- Mirroring Elements using the Mirror - Draw Axis Tool

Creating an Offset
Creating an Array of Elements

- Linear
- Radial

Matching Elements
Aligning Elements and Working with Constraints
Deleting Elements
Splitting Elements
Splitting with Gap
Splitting Faces
Creating Parts

- Resizing Created Parts
- Changing the Material of Created Parts
- Dividing Parts

Grouping Elements

- Creating Groups by Selecting Elements in Project Views
- Creating Groups Using the Group Editor
- Creating a Detail Group
- Creating Model and Attached Detail Groups
- Placing Groups
- Swapping Groups
- Modifying Groups
- Excluding Elements from a Group
- Saving and Loading Groups
- Converting Groups into Linked Models
- Deleting Groups

Creating Similar Elements
Pinning and Unpinning Elements
Scaling Elements
Using Diagnostic Tools

- Measuring Distance between References and Along an Element
- Selecting Elements Using the Element ID

Assemblies

- Creating Assemblies
- Editing Assemblies
- Creating Assembly Views and Sheets

Chapter 6. Working with Datum Plane and Creating Standard Views

Introduction
Working with Levels

- Understanding Level Properties
- Adding Levels
- Modifying Level Parameters

Hiding Elements in a View

- Controlling the Visibility of Levels

Working with Grids

- Creating Grids
- Modifying Grids

- Grid Properties
- Customizing the Grid Display
- Controlling the Visibility of Grids

Reference Planes
Work Planes
- Setting a Work Plane
- Controlling the Visibility of Work Planes

Working with Project Views
- Viewing a Building Model
- Visibility/Graphic Overrides of an Element
- Visibility/Graphic Overrides of an Element Category
- Making Elements Transparent
- Using the Temporary Hide/Isolate Tool
- Plan Views
- Elevation Views
- Section Views
- Using the Scope Box Tool

Chapter 7. Using Basic Building Components-II

Introduction
Creating Architectural Floors
- Sketching the Floor Boundary

Creating Roofs
- Creating Roofs by Footprint
- Creating Roofs by Extrusion
- Modifying Roof Properties and Editing Shapes

Shape Editing Tools for Floors
- Modify Sub Elements
- Add Point
- Add Split Line
- Pick Supports
- Reset Shape
- Creating

Ceilings
- Creating an Automatic Ceiling
- Sketching a Ceiling
- Using the Pick Walls Method
- Modifying a Ceiling

Rooms
- Adding Rooms
- Calculating Room Volumes
- Cutting Openings in a Wall, Floor, Roof, and Ceiling

Joining Walls with Other Elements
- Using the Attach Top/Base and Detach Top/ Base Tools

Chapter 8. Using Basic Building Components-III

Introduction
Using Components in a Project
- Adding Components

Adding Stairs
- Run Tool
- Landing Tool
- Support Tool
- Modifying Stairs Properties

Adding Railings
- Adding Railings by Sketching the Path
- Adding Railings by Placing on Stair/Ramp
- Modifying Railing Properties
- Modifying Railing Joints

Adding Ramps
Using Curtain Systems in a Project
- Creating a Curtain Wall Using the Wall: Architectural Tool
- Creating a Curtain Wall by Picking Lines
- Creating a Curtain System on a Face
- Adding Curtain Grids
- Modifying Curtain System Panels
- Adding Doors and Awnings to a Curtain System
- Adding Mullions

Copying Elements from One Level to Another
- Using the Pasting Tools

Chapter 9. Adding Site Features

Introduction
Working with Site Features

- Creating a Toposolid
- Modifying Toposolid and Sub-Element
- Creating Subdivision
- Simplifying Toposolids
- Excavating Toposolids
- Grading Toposolid
- Creating Topography from Imported Data

Setting the Contour Display
Adding Property Lines

- Sketching Property Lines
- Creating Property Lines Using Distances and Bearings

Adding Site Components
Adding Parking Components
Adding Labels to Contours

Chapter 10. Using Massing and Family Tools

Introduction
Understanding Massing Concepts
Creating the Massing Geometry

- Creating a Massing Geometry in the Family Editor
- Editing a Massing Geometry in the Family Editor
- Creating Cuts in a Massing Geometry by Using the Family Editor
- Placing the Massing Geometry in a Project
- Creating the In-Place Mass in a Project

Massing in Conceptual Design Environment

- Interface of the Conceptual Design Environment
- Creating Masses in Conceptual Design Environment

Creating Building Elements from the Massing Geometry Using

- Building Maker Tools
- Creating Walls by Selecting Faces
- Creating Floors by Selecting Faces
- Creating Roofs by Selecting Faces
- Creating Curtain Systems by Selecting Faces
- Controlling the Visibility of a Massing Geometry
- Adding other Building Elements

Creating Families

- Creating In-Place Families
- Creating Families Using Standard Family Templates

Chapter 11. Adding Annotations and Dimensions

Introduction
Adding Tags
- Tagging Elements by Category
- Tagging All Elements in a View
- Tagging Treads or Risers
- Tagging with Multiple Leaders

Room Tags
- Room Separation
- Tagging Rooms

Keynotes
- Loading Keynote File
- Placing Keynotes
- Adding Keynote Legends

Adding Symbols
Adding Dimensions
- Types of Dimensions
- Dimensioning Terminology
- Adding Permanent Dimensions
- Adding Alternate Dimension Units
- Baseline and Ordinate Dimensions
- Editing Dimensions
- Controlling the Display of Tick Marks and Dimension Arrows
- Creating Linear Wall Dimensions Automatically
- Adding Spot Dimensions
- Placing a Spot Dimension
- Modifying Spot Dimension Properties
- Converting Temporary Dimensions to Permanent Dimensions

Chapter 12. Creating Project Details and Schedules

Project Detailing in Autodesk Revit
Creating Details in a Project
- Callout View
- Displaying the Callout View
- Modifying Callout View Properties
- Adding Details to the Callout View

Crop Regions

- Model Crop Region
- Annotation Crop Region

Creating Drafted Details
- Creating a Drafting View
- Drafting a Detail
- Line Style Settings
- Using Line Weights
- Using Line Patterns

Adding Text Notes
- Creating Text Notes
- Editing Text Notes
- Creating a Model Text

Revision Clouds
- Creating the Revision Cloud
- Adding a Revision Tag

Using Schedules in a Project
- Generating a Schedule
- Exporting Schedule to Excel Sheet
- Creating a Legend View

Chapter 13. Creating and Plotting Sheets

Introduction

Creating Drawing Sheets
- Adding a Drawing Sheet to a Project
- Adding Views to a Drawing Sheet
- Modifying View Properties
- Panning the Viewports Added to the Sheet
- Replacing a View in the Viewport
- Adding Schedules to a Drawing Sheet
- Modifying a Building Model in a Drawing Sheet

Creating Guide Grids

Duplicating Dependent Views
- Creating Dependent Views
- Adding Matchline to Dependent Views
- Adding View Reference

Printing in Autodesk Revit
- Printing Drawing Sheets and Project Views
- Selecting and Modifying the Printer Settings

- Using the Print Setup Dialog Box
- Previewing the Print Setup

Chapter 14. Creating 3D Views

Introduction
Three-Dimensional (3D) Views

- Generating Orthographic View
- Dynamically Viewing Models Using Navigation Tools
- Using the Orient Tool
- Generating Perspective Views
- Fly Mode for View
- Locking and Unlocking 3D Views
- Using the Section Box

Chapter 15. Rendering Views and Creating Walkthroughs

Rendering in Revit

- Rendering Workflow
- Introduction to Materials
- Applying Lights
- Using Decals and Entourages
- Rendering Settings

Creating a Walkthrough

- Creating the Walkthrough Path
- Editing and Playing the Walkthrough
- Recording a Walkthrough

Autodesk | Rendering

- Rendering in Cloud
- Accessing Render Gallery

Rendering in Enscape

- Advantages of Enscape
- Starting Enscape Rendering
- Navigating in Enscape
- Creating Views using Enscape
- Rendering Images using Enscape
- Placing Components using Enscape Asset Library
- Changing the Day time in Enscape

- Exporting Enscape Project
- Making a Video of the Project

Chapter 16. Architectural Drafting Standards and Documentation

Introduction to Architectural Drafting
- Drafting Standards and Best Practices
- Sheet Composition and Layout Principles
- Annotation Standards

Advanced Drafting Tools in Revit
- Detail Components
- Filled Regions and Masking Regions
- Detail Lines and Symbol Usage
- Repeating Details
- Detail Groups

Construction Documentation
- Preparing Working Drawings
- Dimensioning Standards
- Material Tagging and Keynotes
- Revision Management

Advanced Sheet Management
- Sheet Templates
- Title Blocks Customization
- View Templates
- Managing Multiple Sheets
- Exporting Documentation Sets

Drafting Labs
- Preparation of Complete GFC Drawings
- Architectural Detailing Exercises
- Interior Layout Documentation
- Working Drawing Set Creation

Chapter 17. Enscape for Architectural Visualization

Introduction to Real-Time Visualization
- Understanding Real-Time Rendering
- Revit to Enscape Live Synchronization

Enscape Interface and Workflow
- Enscape Toolbar Overview
- Real-Time Navigation Controls
- Visual Settings Management

- Performance Optimization

Materials and Textures

- Applying Realistic Materials
- Material Editor in Enscape
- Reflection, Transparency, and Bump Maps
- Creating Custom Material Libraries

Lighting Techniques

- Artificial Lighting Setup
- Natural Daylight Simulation
- HDRI Sky Settings
- Night Rendering Techniques

Asset Library and Scene Enhancement

- Using Enscape Asset Library
- Vegetation Placement
- Furniture and Interior Assets
- Human Characters and Entourage

Camera and Visual Composition

- Camera Angles and Perspectives
- Depth of Field
- Field of View Adjustments
- Scene Framing Techniques

Rendering and Output Creation

- High-Quality Image Rendering
- Batch Rendering
- Panorama Rendering