Autodesk REVIT (Architecture) Mastering
Training details

DESCRIPTION

Revit® software is specifically built for Building Information Modeling (BIM), empowering design and construction professionals to bring ideas from concept to construction with a coordinated and consistent model-based approach. Revit is a single application that includes features for architectural design, MEP and structural engineering, and construction.

Revit software works the way architects and designers think, so you can develop higher-quality, more accurate architectural designs. You can use tools built to support Building Information Modeling (BIM) workflows, capture and analyze concepts, and maintain your vision through design, documentation, and construction.

Revit software helps you get better construction insight from design models. Any change that you make to your design model is automatically updated throughout your documentation.

OBJECTIVES:

This course covers the basics of Revit Architecture, from schematic design through construction documentation. Delegates are introduced to the concepts of Building Information Modelling and the tools for parametric building design and documentation.

TRAINING STRUCTURE:

Autodesk Revit (Architecture) contains (2) courses:
- Autodesk Revit (Architecture) Professional   14 class x 2.5 hours = 35 hours
- Autodesk Revit (Architecture) Expert   10 class x 2.5 hours = 25 hours

COURSE TEXTBOOKS AND OTHER READING MATERIALS

We recommend the following resources:
- Mastering Autodesk Revit Architecture
- Autodesk Revit Architecture Essentials

Web Resources:
- http://www.autodesk.com/products/autodesk-revit-family/overview
- http://seek.autodesk.com
- http://help.autodesk.com/view/RVT/2014/ENU

PREREQUISITES:
- Basic knowledge and skills about using computers.
- Architecture background is recommended

COURSE GRADING:

Attendance 40% Assignments (workshop + 2 projects) 60% To pass the course and receive both (2) Autodesk certificate & CAD MASTERS certificate you should:
- Attend at least 80% of course hours.
- Score more than 70% as a total score.

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AUTODESK REVIT (ARCHITECTURE) PROFESSIONAL – COURSE OUTLINE

This course including the following:

Introduction:
- The Basics of BIM
- What Is Revit?
- Understanding a BIM Workflow

Introducing the Autodesk Revit Architecture Interface
- Understanding the Interface
- Application Menu
- Quick Access Toolbar
- Info Center
- Ribbon
- Drawing Area
- Properties Palette
- Project Browser
- Status Bar
- View Control Bar
- View Cube
- Options Bar
- Navigation Methods
- Understanding the Interface Workflow
- Creating a Simple Layout
- Using Filter, Mirror, and Trim/Extend
- Adjusting Datums
- Changing Element Types
- Using Common Modifying Tools
- Using Dimensions for Modifying Designs
- Aligning Elements
- Rotating, Grouping, and Arraying
- Aligned Copying and Group Editing
- The Basics of the Toolbox
- Selecting, Modifying, and Replacing Elements
- Selecting Elements
- Selection Options
- Filtering Your Selection
- Using Selection-Based Filters
- Selecting All Instances
- Using the Properties Palette
- Matching Properties
- Using the Context Menu
- Editing Elements Interactively.
- Moving Elements
- Copying Elements
- Rotating and Mirroring Elements
- Arraying Elements
- Scaling Elements
- Aligning Elements
- Trimming or Extending Lines and Walls
- Splitting Lines and Walls.
- Offsetting Lines and Walls.
- Keeping Elements from Moving
- Exploring Other Editing Tools
- Using the Join Geometry Tool
- Using the Split Face and Paint tools.
- Copying and Pasting
- Using the Create Similar Tool
- Using Keyboard Shortcuts (Accelerators)
- Double-Click to Edit
- Using the Context Menu

Walls and Curtain Walls
- Understanding Wall Types and Parameters
- Basic Walls
- Stacked Walls
- Curtain Wall Types
- Sketching Walls
- Picking Walls
- Hosting Elements in Walls
- Modifying Walls

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- Creating Numerous Wall Configurations
- Editing Profiles
- Attaching and Detaching the Top and Base
- Resetting Profiles
- Cutting Openings
- Splitting Walls
- Swapping Walls
- Creating Curtain Walls
- Curtain Grids

- Instance Parameters
- Adding Mullions
- Embedding Curtain Walls
- Modifying Curtain Walls
- Editing the Elevation Profile
- Adding and Modifying Grids and Mullions
- Unpinning and Toggling Mullions
- Modifying Curtain-Grid Segments
- Modifying Curtain Panels

Floors, Roofs, and Ceilings
- Creating Floors
- Sketching
- Editing the Boundary
- Creating Sloped Arrows and Floors
- Creating Sloped Floors via Shape Editing
- Creating Openings by Sketching
- Creating Openings with Shafts
- Picking Walls
- Laying Out Roofs
- Sloping the Ceiling

- Picking Walls
- Creating Slope Arrows
- Creating Extruded Roofs
- Adding Ceilings
- Creating Automatic Ceilings
- Sketching Ceilings
- Dealing with Bulkhead Conditions
- Adding Lights and Rotating the Grid
- Changing the Ceiling

Stairs, Ramps, and Railings
- Creating Stair Configurations
- Creating the Generic Railing
- Editing the Boundary
- Creating a Straight-Run Stair
- Creating a Straight-Run Stair with Landing
- Creating Multistory Runs
- Setting the Host Function for Railings

- Designing Ramps
- Creating a Straight-Run Ramp
- Editing Boundary Conditions
- Building Railings for Level and Sloped Conditions
- Using the Set Host Function
- Editing the Top Rail

Adding Families
- Understanding the Model Hierarchy
- Assigning Families to Categories
- Working with System Families
- Loading System Families
- Placing System Families
- Working with Component Families

- Loading Component Families
- Using Hosted Families
- Using Face-Based Families
- Using In-Place Component Families
- Finding Content

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Modifying Families
- Editing View Display and Detail Level
- View Scale and Detail Level
- Level of Detail
- Changing the Family Category
- Editing the Family Category
- Editing the Insertion Point
- Modifying Family Geometry

- Editing the Family
- Editing Profiles
- Detail Components
- Repeating Details
- Title Blocks
- Hosted Components

Schematic Design
- Working from a Sketch
- Importing Background Images
- Accurately Scaling Images
- Using Reference Planes and Levels
- Creating and Placing Groups
- Modeling In-Place Masses
- Modeling the Base Mass

- Modeling the Middle Mass
- Modeling the Upper Mass
- Working in 3D
- Creating Mass Floors
- Scheduling Mass Floors
- Updating the Massing Study

Rooms and Color-Fill Plans
- Defining Rooms in Spaces
- Room Tags
- Room Boundaries
- Room Separation Lines
- Deleting Rooms

- Adding a Color Legend
- Generating Color-Fill Room Plans
- Modifying Color Schemes
- Adding Tags and Fill Colors in Section

Materials, Rendering, and Visualization
- Using Materials
- Editing Material Properties of Walls
- Using Graphic Display Options
- Presentation Elevation Drawing

- Presentation 3D Isometric Drawing
- 3D Exploded View
- Rendering Graphics.

Details and Annotations
- Creating Details
- Detail Line
- Region
- Component
- Creating a Detail
- Insulation
- Detail Groups

- Line work
- Annotating Your Details
- Dimensions
- Tags
- Text
- Using Legends

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Creating Drawing Sets
- Creating Schedules
- Understanding Schedules
- Making Schedules
- Creating a Window Schedule
- Creating a Room Schedule
- Creating a Sheet List
- Placing Views on Sheets

- Adding Floor Plans to the Sheet
- Adding the Schedules
- Printing Documents
- Exploring the Print Dialog Box
- Exploring the Print Settings
- Exploring the Print Range

Workflow and Site Modeling
- Understanding a BIM Workflow
- Staffing a BIM Project
- Project Roles Using Revit Architecture
- Adding Team Members to Fight Fires
- Modeling a Site
- Using a Topo surface

- Creating a Building Pad
- Generating Property Lines
- Cut and Fill Schedules
- Performing Quality Control on Your Model
- Keeping an Eye on File Size
- Dealing with Warnings

Repeating Objects, Best Practices, and Quick Tips
- Repeating Objects
- Optimizing Performance
- Utilizing Best Practices

- Using Quick Tips and Shortcuts
- Finding Additional Resources

AUTODESK REVIT (ARCHITECTURE) EXPERT – COURSE OUTLINE

This course including the following:

Advanced Modelling and Massing
- Massing UI and Functionality
- Intuitive and Formula Mass Creation
- In-Place Masses
- Family Component Masses
- Floor Area Faces and Scheduling Masses
- Intuitive Massing

- In-Place Surface
- Solids
- Formula-Driven Massing
- Simple Mass Family
- Generic Model Mass Family
- Complex Mass Family

Conceptual Design and Design Analysis
- Sustainable Analysis
- Create a Conceptual Mass
- Energy Modeling
- Conceptual Energy Analysis

- Energy Analysis Setup
- Detailed Energy Modeling
- Exporting to gbXML

Visualization
- The Role of Visualization
- Analytic Visualization
- Monochromatic Views

- Creating Your View
- Locking Your View
- Still Image Camera

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- Project Parameters
- User-Defined Parameters
- Identifying Design Elements
- Solar and Shadow Studies
- Photorealistic Visualization
- Visual Styles
- Section Box
- Rendering Settings

- Creating a Walkthrough
- Rendering Sequence and Workflow
- Geometry and Cameras
- Sunlight
- Artificial Lighting
- Light Groups
- Materials

Walls and Curtain Walls
- Using Extended Modeling Techniques for Basic Walls
- Creating Basic Wall Types
- Adding Wall Articulation
- Modeling Techniques for Basic Walls
- Creating Custom In-Place Walls
- Creating Stacked Walls
- Creating Simple Curtain Walls
- Designing a Curtain Wall
- Customizing Curtain Wall Types
- Creating Complex Curtain Walls

- Dividing the Surface
- Dividing the Surface with Intersects
- Applying Patterns
- Editing the Pattern Surface
- Surface Representation
- Adding Definition
- Creating Custom Patterns
- Limiting the Size of Pattern-Based Families
- Using the Adaptive Component Family
- Scheduling Pattern-Based Panels

Floors, Ceilings, and Roofs
- Understanding Floor Types
- Floor
- Structural Floor
- Floor by Face
- Pad
- Sketching for Floors, Ceilings, and Roofs
- Footprint Roofs
- Roof by Extrusion
- Roof In-Place
- Roof by Face
- Sloped Glazing

- Modeling Slab Edges
- Creating a Custom Floor Edge
- Modeling Floor Finishes
- Split Face for Thin Finishes
- Modeling Thick Finishes
- Creating Ceilings
- Understanding Roof Modeling Methods
- Slope Arrows
- Advanced Shape Editing for Floors and Roofs
- Creating a Roof with a Sloped Topping
- Applying a Variable Thickness to a Roof Layer

Family Editor
- Type and Instance Parameters
- Model Organization and Control
- Family Modeling Techniques
- Creating an Extrusion
- Creating a Sweep
- Creating a Revolve
- Nesting Families
- Extended Family Management Techniques
- Visibility Check
- Parametric Arrays and Family Type Parameters

- Getting Started with a Family
- Understanding In-Place Families
- Choosing the Right Family Template and Category
- Hosted vs Non-hosted
- Other Types of Families
- Understanding the Family Editor
- Creating the Framework for a Family Component
- Reference Planes, Lines, and Points
- Dimensions

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Stairs and Railings

- How to Approach Stairs and Railings
- Key Components of Stairs and Railings
- The Basic Rules of Stairs
- Components of Stairs
- Components of Railings
- Creating Railings
- Creating a Custom Railing
- Curtain Wall or Glass Railings
- Using the Railing Tool for Other Objects
- Creating Stairs
- Understanding the Stair Tools
- Components for Customizing Stairs
- Stairs outside the Box
- Annotating Stairs

Detailing Your Design

- Creating Details
- Detail Line
- Regions
- Components
- Insulation
- Detail Groups
- Linework
- Adding Detail Components to Families
- Adding Details to a Window Family
- Visibility Settings
- Learning Efficient Detailing
- Reusing Details from Other Files
- Linking vs Importing
- Reusing Details from Other Revit Projects

Documenting Your Design

- Documenting Plans
- Room Objects
- Area Plans
- Creating Schedules and Legends
- Schedules
- Legends
- Laying Out Sheets
- Adding the Area Plan
- Using Guide Grids
- Adding the Schedule
- Finishing the Sheet

Annotating Your Design

- Annotating with Text and Keynotes
- Using Text
- Using Keynotes
- Annotating with Tags

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