Autodesk Revit Structure Basics : Comprehensive Structural Modelling Course

Target Audience

This course is designed for structural engineers, civil engineers, structural designers, BIM coordinators, and CAD drafters who wish to master Revit Structure for building information modeling in structural projects. It is suitable for professionals transitioning from AutoCAD or other structural design tools, as well as recent graduates seeking practical BIM skills for industry-standard structural design workflows.

Course Objective

To equip participants with the knowledge and practical skills needed to create, manage, and document complete structural building models using Autodesk Revit Structure. The course covers all phases of structural design — from initial project setup and element placement through analytical modeling, reinforcement detailing, collaboration, accurate BIM-based structural engineering practice.

Course Outcome

Upon successful completion of this course, participants will be able to: navigate the Revit Structure interface and configure project settings confidently; create and manage structural models including columns, beams, slabs, walls, foundations, and connections; and manage reinforcement (rebar) in beams, columns, and slabs; collaborate effectively using worksharing tools; produce construction documentation including sheets, schedules, tags, and exported files; and integrate Revit Structure.

Course Outline: The course comprises **24-hours** of theory, demonstrations, and hands-on exercises divided into **7** chapters. Each chapter is structured with practical examples and guided exercises to reinforce learning and ensure a thorough understanding of structural BIM concepts using Autodesk Revit Structure.

Chapter 1: Introduction to Revit Structure

- What is Revit Structure?
- Overview of Structural Modeling and BIM
- Benefits of Revit in Structural Design
- Interface Walkthrough and Navigation Tools
- **Practice Exercises**

Chapter 2: Revit Structure Basics

- Setting up a Structural Project (Templates and Units)
- Defining Grids and Levels
- Placing Structural Elements (Columns, Beams, Braces)
- Working with Structural Walls and Load-Bearing Elements
- **Practice Exercises**

Chapter 3: Structural Elements

- Slabs and Structural Floors (Spanning and Composite)
- Beams, Frames, and Trusses
- Foundations and Footings (Isolated, Strip, Mat)
- Structural Connections and Joints
- **Practice Exercises**

Chapter 4: Reinforcement in Revit Structure

- Adding Rebar in Slabs (Area and Path Reinforcement)
- Placing Rebar in Beams and Columns (Stirrups, Ties, Longitudinal Bars)

- Rebar Constraints, Cover Settings, and Bar Types
- **Practice Exercises**

Chapter 5: Collaboration and Documentation

- Worksharing in Revit Structure (Central File and Local Files)
- Creating Sheets, Viewports, and Drawing Sets
- Structural Schedules, Tags, and Annotation
- Exporting to IFC, DWG, and Other Formats
- **Practice Exercises**