

# Autodesk Revit Structure & Navisworks Coordination

## Target Audience

This course is designed for BIM coordinators, structural engineers, project managers, and construction professionals who want to combine advanced 3D structural modelling in Revit with clash detection, 4D simulation, and model review capabilities in Navisworks. Ideal for those managing multi-discipline coordination and construction scheduling on complex projects.

## Course Objective

To equip participants with the skills to create detailed structural BIM models in Revit Structure and leverage Navisworks for model federation, clash detection, 4D construction sequencing, and project review — enabling full lifecycle coordination from design to construction.

## Course Outcome

After completing this course, learners will be able to build and manage structural Revit models, federate multi-discipline models in Navisworks, detect and resolve hard and soft clashes, link project schedules for 4D simulation, perform quantity-based 5D analysis, and produce coordination reports for construction teams.

## Course Outline

The course comprises **40-hours** of theory and demonstrations and is divided into **10 different chapters**. Each chapter is designed with practical examples and guided exercises to reinforce learning.

### Chapter 0: Introduction to BIM Coordination Workflow

- Course Overview and Learning Path
- BIM Coordination Process and Roles



- Overview of Revit and Navisworks in the BIM Workflow
- Software Setup and Project File Organisation
- **Practice Exercises**

## **Chapter 1: Revit Structure – Core Modelling**

- Revit Interface, Project Setup and Structural Templates
- Levels, Grids and Structural Reference Planes
- Modelling Foundations, Columns, Beams and Slabs
- Structural Walls, Ramps and Complex Geometry
- Linking Architectural and MEP Models in Revit
- **Practice Exercises**

## **Chapter 2: Advanced Revit Structural Modelling**

- Rebar Modelling: Placement, Shapes and Schedules
- Precast Component Modelling and Assembly
- Steel Framing and Connection Detailing
- Material Takeoff and Quantity Schedules in Revit
- Preparing Revit Models for Navisworks Export (NWC)
- **Practice Exercises**

## **Chapter 3: Introduction to Navisworks**

- Navisworks Manage Interface and Navigation Tools
- Importing NWC, NWD, IFC, DWG and RVT Files
- Model Federation: Combining Disciplines into One Model
- Selection Sets, Search Sets and Object Properties
- Appearance Profiler and Visual Model Review
- **Practice Exercises**

## **Chapter 4: Clash Detection in Navisworks**

- Understanding Hard, Soft and Clearance Clashes
- Setting Up Clash Tests Between Disciplines
- Reviewing, Assigning and Resolving Clash Reports
- Exporting Clash Reports to PDF and BCF Format



- Coordination Workflow: From Clash to Resolution
- **Practice Exercises**

## **Chapter 5: Model Review and Presentation**

- Sectioning, Redline Markups and Viewpoints
- Creating Saved Viewpoints and Animations
- Clash Report Presentation to Stakeholders
- Photorealistic Rendering in Navisworks
- **Practice Exercises**

## **Chapter 6: 4D Construction Sequencing**

- Introduction to 4D BIM: Linking Models to Schedules
- Importing MS Project / Primavera Schedules into TimeLiner
- Attaching Revit Elements to Schedule Tasks
- Creating Construction Sequence Animations
- Scenario Analysis and What-If Simulations
- **Practice Exercises**

## **Chapter 7: 5D Cost Planning with Navisworks**

- Introduction to 5D BIM: Cost-Linked Models
- Quantity Extraction from Navisworks
- Integrating Cost Data with Model Elements
- Generating Cost Reports and Variance Analysis
- **Practice Exercises**

## **Chapter 8: Multi-Discipline Coordination Workflow**

- Structural, Architectural and MEP Coordination Meetings
- Issue Tracking and BCF Integration
- BIM Track Add-In for Navisworks Issue Management
- Coordination Log Management and RFI Workflow
- **Practice Exercises**

## **Chapter 9: BIM Delivery & Project Closeout**



- Model Audit and Quality Control Checks
- As-Built Model Update Workflow
- Producing Coordinated Drawing Sets from Revit
- Navisworks NWD Archive for Client Handover
- Capstone: Full Coordination Exercise (Revit + Navisworks)
- **Practice Exercises**

