

Autodesk Advance Revit Architecture with BIM management & Dynamo

Build architectural models first, then manage BIM delivery and automate repeatable tasks with Dynamo.

Course overview

A progressive, project-based course combining Revit Architecture essentials and selected advanced workflows with BIM standards, planning, collaboration, model health and Dynamo automation. One architectural project continues through modeling, documentation, coordination and handover.

Who this course is for

Architects, designers and AEC professionals who are new to Revit and want to progress toward BIM coordination and management. Basic architectural drawing knowledge and computer proficiency are recommended; prior Revit experience is not required.

Learning outcomes

- Create and document a multilevel architectural Revit model with reusable content.
- Prepare practical BIM standards, a project BEP and information delivery requirements.
- Coordinate linked models, review issues and assemble a checked handover package.
- Use Dynamo to automate a repeatable task and verify the resulting model data.

Table of Contents (56 Hours)

Autodesk Advance Revit Architecture

01 Revit Foundations & Architectural Project Setup

Revit Environment

- BIM and parametric modeling; categories, families, types and instances.
- Interface, Properties palette, Project Browser, selection and navigation.
- Start from a template; set units, snaps and project information; save files.

Datums & Views

- Create and edit levels, grids, reference planes and work planes.
- Create plans, elevations and sections; control scale and detail level.
- Apply visibility/graphics, temporary hide/isolate and scope boxes.

Guided lab: Set up the training building with named levels, grids and working views.

02 Walls, Openings & Efficient Model Editing

Architectural Elements

- Create exterior and interior walls; edit layers, materials and constraints.
- Introduce stacked, slanted and tapered walls; sweeps and reveals.
- Load and place doors and windows; edit types, hosts and wall openings.

Model Editing

- Move, copy, rotate, mirror, align, trim/extend, offset and split elements.
- Use arrays, temporary dimensions, constraints and selection filters.
- Create model groups; copy between levels; pin elements and manage joins.

Guided lab: Model the building walls and openings, then repeat and modify a typical layout.

03 Floors, Roofs, Circulation & Curtain Walls

Building Envelope

- Sketch floors and ceilings; edit boundaries, offsets and floor slopes.
- Create roofs by footprint and extrusion; edit slopes and roof properties.
- Create shafts and openings; attach walls to roofs and coordinate joins.

Circulation & Facades

- Create stairs with runs, landings and supports; edit key constraints.
- Add ramps and railings; adjust paths, hosts and railing properties.
- Create curtain walls; edit grids, mullions, panels and curtain doors.

Guided lab: Complete a multilevel building with a roof, stair, railing and curtain facade.

04 Site, Conceptual Massing & 3D Presentation

Site & Concept Design

- Create and edit a basic Toposolid; introduce contours and subdivisions.
- Add property lines, site components and parking components.
- Create a simple conceptual or in-place mass; generate elements by face.

Model Presentation

- Create orthographic and perspective views; use cameras and section boxes.
- Apply materials and visual styles; introduce lighting and render settings.
- Create and edit a short walkthrough path for design review.

Guided lab: Add a simple site and prepare a 3D presentation view and walkthrough.

05 Parametric Families & Model Information

Family Creation

- Choose system, loadable or in-place families and suitable family templates.
- Use reference planes, dimensions, constraints and solid/void geometry.
- Create type and instance parameters; introduce formulas and flex testing.

Reusable Content & Data

- Load, test and revise a simple parametric architectural family.
- Distinguish family, project and shared parameters and their uses.
- Apply consistent names and material parameters; check content behavior.

Guided lab: Build and flex-test one reusable family, then add shared data for scheduling.

06 Documentation, Schedules & Drawing Delivery

Annotation & Detailing

- Place rooms, room separators and tags; review room areas and volumes.
- Add dimensions, spot dimensions, text, tags, keynotes and legends.
- Create callouts and drafting details; manage crop regions and revisions.

Schedules & Sheets

- Create door, room and quantity schedules; sort, filter and format data.
- Apply view templates and filters; arrange dependent views and matchlines.
- Create sheets with title blocks, views and schedules; print/export PDF and schedule data.

Guided lab: Issue a compact drawing set with plans, a section, detail and checked schedules.

BIM Management and Dynamo

07 Orientation & BIM Management Foundations

Management Principles

- Define BIM manager, coordinator and author responsibilities across the project lifecycle.
- Introduce ISO 19650 concepts, information management and BIM maturity.
- Connect client requirements, BIM uses, deliverables and project success measures.

Team & Technology Readiness

- Review team competencies and identify targeted training needs.
- Evaluate software, add-ins, hardware and AI tools against project needs.
- Prioritize adoption actions using benefits, costs and implementation risks.

Guided lab: Create a responsibility matrix and a short team/tool readiness assessment.

08 Corporate BIM Standards & Documentation

Standards & Templates

- Define model, view, sheet, content and parameter naming/numbering standards.
- Package the Revit templates, graphic settings and families created earlier for reuse.
- Define shared-parameter governance, content approval and template change control.

Corporate Delivery Framework

- Create a corporate BEP framework covering roles, risks and mobilization.
- Introduce TIDP and MIDP templates and information delivery responsibilities.
- Define model health thresholds, milestone QA/QC, staff training and lessons learned.

Guided lab: Prepare a concise standards checklist and reusable corporate BEP skeleton.

09 Project Needs Assessment & BIM Planning

Project-Specific Bep

- Translate client information requirements into BIM uses, milestones and deliverables.
- Define Level of Development (LOD) and Level of Information Need for the sample project.
- Adapt the corporate BEP with responsibilities, risks and task/master delivery plans.

Project Initialization

- Agree project datums and a coordinate strategy using the existing levels and grids.
- Set up worksharing, worksets and phases; select project templates and content.
- Plan discipline model links, kickoff checks and BEP acceptance/distribution.

Guided lab: Complete a project BEP extract and configure worksets and phases on the training model.

10 Collaboration Process & Model Coordination

Cde & Team Collaboration

- Apply Common Data Environment (CDE) workflows for work in progress, sharing and issue.
- Configure an ACC project/folder structure, permissions and issue responsibilities.
- Practice central/local model collaboration, synchronization and element ownership.
- Define review, approval, version control and secure external sharing procedures.

Coordination & Deliverable Review

- Link discipline/building models; check units, shared coordinates and location changes.
- Map phases across links; verify stakeholder parameter consistency and model alignment.
- Use a clash matrix and a coordination tool to review, assign and track sample clashes.
- Review consultant deliverables for geometry, information requirements and standards compliance.

Guided lab: Coordinate supplied discipline models; produce a focused clash/issue report with owners and actions.

11 Data Management, Model Health & Handover

Model Auditing & Issue Resolution

- Audit naming, numbering, parameters, information completeness and output consistency.
- Review warnings, file performance, links, worksets and browser organization.
- Investigate visibility problems, problematic families and external references.
- Use journal files and structured escalation to support troubleshooting.

Quality Control & Closeout

- Record QA/QC findings, assign corrective actions and recheck against agreed thresholds.
- Use model issues to update team guidance and organizational standards.
- Prepare model, drawing, schedule and issue records for client/FM handover.
- Archive approved deliverables and document acceptance and lessons learned.

Guided lab: Audit the coordinated training model and prepare a handover checklist with evidence of resolved issues.

12 Dynamo for Revit & Practical BIM Automation

Visual Programming Foundations

- Navigate Dynamo; understand nodes, ports, wires, inputs and execution modes.
- Work with strings, numbers, lists, indexing, filtering and basic logic.
- Select Revit elements and read/write parameters with appropriate data types.
- Debug nulls and list mismatches; validate changes on a training model.

Applied Automation

- Build a guided graph for rule-based view/sheet renaming or parameter population.
- Extract selected model data to CSV for review in a spreadsheet.
- Review an instructor-supplied tagging graph and package dependency considerations.
- Run reusable graphs with Dynamo Player; document inputs, checks and expected results.

Guided lab: Automate one repetitive task on the audited model; compare before/after data and present the final coordinated deliverables.