Objectives

After completing this guide, you will be able to:

- ✓ Describe building information modeling methodology and its benefits.
- ✓ Use different parts of the Revit Structure user interface and work with different types of structural
- ✓ Elements and families.
- ✓ Use the different views listed in the Project Browser, control the visibility and graphical
- ✓ Representation of objects in a structural model, and work with elevation, section, and 3D views.
- ✓ Set up a project and transfer standards between projects, add and modify levels in a structural
- ✓ Model, and create and modify grids.
- ✓ Work with structural columns and structural walls.
- ✓ Add floor framing using beams, work with beams and beam systems, add and edit structural steel
- ✓ Moment and braced frames, and work with concrete beams.
- ✓ Add floors in structural models, create a roof, and add structural framing to the roof for support.
- ✓ Add foundations to a structural model.
- ✓ Create stairs and various types of ramps.
- ✓ Add dimensions and spot dimension symbols, work with text and tags, create a legend with notes,
- ✓ Annotation symbols, and legend components, and work with different types of schedules.
- ✓ Work with detail views, add 3D and 2D reinforcement elements and detail components to
- ✓ Concrete detail views, and work with drafting views and CAD details.
- ✓ Work with sheets and titleblocks, print sheets, and export Revit Structure content to CAD formats

Pre-requisites

This guide is designed for new users of Revit Structure. It is recommended that you have a working knowledge of:

- Basic structural engineering and design skills.
- Microsoft® Windows® 7, Microsoft® Windows® 8, or Microsoft® Windows® 10.

Chapter 1: Building Information Modeling

• About Building Information Modeling
• About Bidirectional Associativity

Chapter 2: Revit Structure Basics

• The Revit Structure User Interface
• The Ribbon Framework
• Guidelines for Using the User Interface
• About Structural Elements
• About Families
• Guidelines for Working with Structural
  Elements and Families

Chapter 3: Viewing the Structural Mode

• About Views
• View Properties
• Guidelines for Working with Views
• About Controlling Object Visibility
• View Templates
• Modifying Line Styles
• Using Filters
• Guidelines for Controlling Object Visibility
• About Elevation and Section Views
• Controlling Visibility of Elevation and Section Tags
• Guidelines for Working with
  Elevation and Section Views
• About 3D Views
• Navigating Through a 3D View
• About Cameras
• Creating and Modifying Camera Views
• Changing Material Properties
• Guidelines for Working with 3D Views

Chapter 4: Starting a New Project

• About Projects
• Creating Project Templates
• Guidelines for Creating Project Template Files
• About Levels
• Adding and Modifying Levels
• Guidelines for Adding and Modifying Levels
• About Grids
• Methods of Creating and Modifying Grid Lines
• Guidelines for Creating and Modifying Grids

Chapter 5: Creating Structural Columns and Walls

- About Structural Columns
- Loading Structural Columns
- Creating Structural Column Types
- Structural Column Tools and Options
- Creating Openings in Structural Columns
- Guidelines for Working with Structural Columns
- About Structural Walls
- Structural Wall Type Parameters
- Structural Wall Instance Parameters
- About Wall Pilasters
- Creating Wall Openings
- Guidelines for Working with Structural Walls

Chapter 6: Creating Frames

- About Floor Framing
- About Beams
- Beam Properties
- Adding Openings in Beams
- Guidelines for Adding and Modifying Beams
- About Beams and Beam Systems
- Beam System Properties
- Methods of Creating Sloped Beams
- Process of Creating a 3D Beam System
- Guidelines for Working with Beams and
  Beam Systems
- About Structural Steel Frames
- Setting Steel Frame Symbols in a Plan View
- Process of Adding Bracing Members
- Editing Braces
- Guidelines for Working with Structural Steel Frames
- About Concrete Beams
- Options to Edit Concrete Beam Joins
- Vertical Justification of Beams
- Guidelines for Working with Concrete Beams

Chapter 7: Using Dimensions and Constraints

- About Temporary Dimensions
- About Permanent Dimensions
- Guidelines for Working with Dimensions
- About Constraints
- Applying and Removing Constraints
- Guidelines for Applying Constraints

Chapter 8: Developing the Building Model

- About Floors
- Modifying Floors
- Guidelines for Creating and Modifying Floors
- About Ceilings
- Modifying Ceilings
- Guidelines for Creating and Modifying Ceilings
- About Roofs
- Process of Sketching Roofs
- Guidelines for Adding and Modifying Roofs
- About Curtain Walls
- About Curtain Grids and Mullions
- Creating Curtain Walls and Modifying Curtain Grids
- Guidelines for Creating Curtain Walls, Grids,
  and Mullions
- Lesson: Adding Stairs and Railings
- About Stairs and Railings
- Creating Stairs and Railings
- Guidelines for Adding Stairs and Railings

Chapter 9: Detailing and Drafting

- About Callouts
- Creating Reference Callouts
- Guidelines for Creating Callouts
- About Text
- About Tags
- Guidelines for Working with Text and Tags
- About Detail Views
- Creating Detail Views
- Process of Saving and Reusing a Detail View
- Guidelines for Saving and Reusing a Detail View
- About Drafting Views
- Process of Creating and Reusing Drafting Views
- Guidelines for Reusing Drafting Views

Chapter 10: Construction Documentation

- About Schedules
- About Schedule Properties
- Exporting Schedules
- Modifying Schedule Fields
- Guidelines for Creating and Modifying Schedules
- About Rooms
- About Room Schedules
- Adding Room Tags
- Modifying Room Area and Volume
- About Material Takeoffs
- Guidelines for Creating Rooms and Room Schedules
- About Legends
- Controlling Legend Visibility
- About Keynoting
- Linking Keynote Files and Adding Keynotes
- Guidelines for Creating Legends and Keynotes

Chapter 11: Presenting the Building Model

- About Drawing Sheets
- Process of Previewing and Printing Sheets and Views
- Guidelines for Working with Drawing Sheets
- About Titleblocks
- Creating and Updating Titleblocks
- Guidelines for Creating and Updating Titleblocks
- About Revision Tracking
- Creating Revision Clouds
- Process of Creating and Linking DWF Files
- Guidelines for Managing Revisions
- About Renderings
- Settings for Creating Renderings
- Guidelines for Creating Renderings
- About Walkthroughs
- Guidelines for Using Walkthroughs
- Sun and Shadow Settings
- Guidelines for Using Sun and Shadow Settings