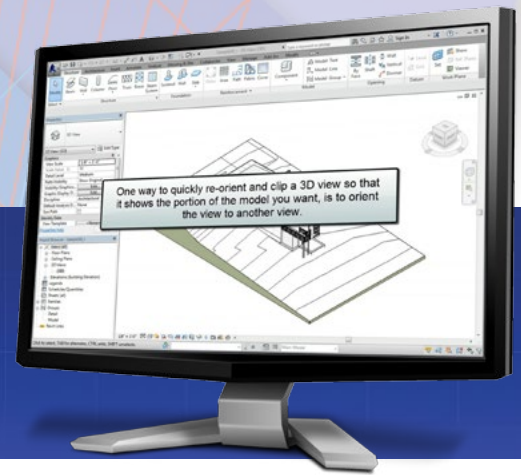


# CADLearning for Autodesk Revit Structure 2014



## Course Details

- ▶ 36+ hours of training
- ▶ 450 video tutorials
- ▶ Exercise files included
- ▶ Instructor:  
Rebecca Frangipane

## Course Description

CADLearning® for Autodesk® Revit® Structure 2014 teaches you how to fully and efficiently utilize the software for performing structural design and analysis. In this course, you'll learn everything from the basics of getting started to advanced concepts, including managing projects, advanced modeling, design analysis, building structure, family creation and worksharing.

## Lesson Outline

### Getting Started

- Starting Revit Structure
- Starting Revit for the First Time
- Opening a Project File
- Identifying the User Interface Components
- Managing User Interface Components
- Understanding the Ribbon
- Customizing the User Interface
- Understanding the Quick Access Toolbar
- Understanding the Options Bar
- Understanding the Application Menu
- Understanding the InfoCenter Toolbar
- Using the Revit App Store

- Understanding the Project Browser
- Understanding the Properties Palette
- Understanding the Type Selector
- Understanding the Status Bar
- Understanding the Drawing Area
- Understanding the View Controls
- Understanding the Navigation Bar
- Understanding the ViewCube
- Understanding the Steering Wheels
- Understanding the Options Dialog
- Managing File and Template Locations
- Managing the Places List
- Starting a New Project from Recent Files

- Starting a New Project from the Application Menu
- Understanding the Units and Snaps
- Using the Mouse
- Using the Keyboard
- Customizing Keyboard Shortcuts
- Managing Windows
- Saving and Closing Files
- Closing the Application

### Revit Fundamentals

- Understanding BIM
- Understanding the Difference between BIM and CAD
- Understanding Revit Concepts
- Working with the Different Versions of Revit

- Understanding Bidirectional Associativity
- Recognizing Parametric Relationships
- Understanding Families
- Placing Model Elements
- Sketching Model Elements
- Placing View-Specific Elements
- Working with Datum Elements
- Placing Elements from the Project Browser
- Loading Families and Using Type Catalogs
- Finding Families Using Autodesk Seek
- Editing Families within a Project

### Basic Modify and Reporting Tools

- Selecting Objects
- Modifying Selection Settings
- Saving Selection Sets
- Copying and Moving Objects
- Rotating Objects
- Creating Linear Arrays
- Creating Radial Arrays
- Scaling Objects
- Mirroring Objects
- Flipping Objects
- Using the Clipboard for Copy and Paste
- Splitting Objects
- Creating Elements Consistently with Match Type Properties and Create Similar
- Aligning Objects
- Trimming and Extending Objects
- Offsetting Objects

- Pinning Objects in Place
- Deleting Objects
- Cutting and Joining Geometry
- Splitting the Face of an Element
- Applying Materials as Paint
- Measuring versus Dimensioning Objects
- Understanding Element IDs
- Understanding and Reviewing Warning Messages
- Reporting and Displaying Coordinates

### Modeling Essentials

- Creating and Modifying Levels
- Creating and Modifying Grids
- Controlling Datum Visibility
- Limiting Visibility of Datum Using Scope Boxes
- Setting and Showing the Active Work Plane
- Creating Reference Planes
- Modeling Accurately with Length and Angle Snap Increments
- Working with Object Snaps
- Using Visualization Aids When Working in 3D Views

### Walls - An In-Depth Look

- Understanding Wall Drawing Aids
- Understanding Wall System Families and Types
- Creating Structural Walls
- Creating Walls by Picking Lines
- Creating a Wall by Face
- Understanding Wall Properties
- Changing the Wall Type as Your Design Evolves

- Creating a Stacked Wall
- Modifying Wall Profiles
- Creating a Wall Opening
- Introducing Wall Layer Functions
- Overriding Host Layer Display
- Understanding Layer Join Cleanups
- Understanding Wall Layer Wrapping
- Understanding Compound Structures
- Customizing Vertical Wall Structure by Splitting Regions
- Customizing Vertical Wall Structure by Adding Sweeps
- Customizing Vertical Wall Structure by Adding Reveals
- Creating In-Place Wall Sweeps
- Creating In-Place Wall Reveals
- Customizing the Base and Top Extension of Walls
- Modifying Walls by Attach Top or Base
- Adjusting and Aligning Model Patterns

### Building Structure

- Managing Structural Symbolic Representation Settings
- Creating Structural Columns
- Adding Slanted Columns
- Creating Isolated Foundations
- Creating Wall Foundations
- Creating Stepped Foundations
- Creating Foundation Slabs
- Creating Floors
- Modifying Floor Properties

- Creating Sloped Floors by Sketching
- Creating Sloped Floors by Shape Editing
- Creating Floor Openings
- Creating Slab Edges
- Understanding Structural Beam Types
- Creating Beams
- Understanding the Beam Properties
- Sloping Beams Using 3D Snapping
- Sloping Beams by Setting to a Workplane
- Creating Beam and Column Joins
- Modifying Elements with Coping
- Creating Openings in Beams
- Creating Beam Systems
- Creating Structural Braces
- Creating Trusses
- Creating a Roof by Footprint
- Creating a Roof by Extrusion
- Joining and Unjoining Roofs
- Understanding Roof Properties
- Creating Sloped Roofs by Sketching
- Creating Sloped Roofs by Shape Editing
- Managing Complex Roof Conditions Using Align Eaves
- Creating Dormer Openings
- Creating Roof Openings
- Placing Rebar
- Managing the Shape Constraints of Rebar

- Placing Area and Path Reinforcement
- Placing Fabric Reinforcement
- Customizing Rebar Cover

### Stairs and Railings

- Creating Stairs by Component
- Creating Landing Components
- Creating Support Components
- Creating Stair Components by Sketching
- Modifying Stair Components
- Customizing Stair Documentation
- Understanding Stair by Component Properties
- Understanding Stair Join Conditions
- Creating Stairs by Sketching the Run
- Modifying Sketched Stairs
- Understanding Stair by Sketch Properties
- Sketching Stairs with Landings
- Creating Stairs by Sketching Boundaries and Riser Lines
- Creating Spiral Stairs
- Creating Multi-Story Stairs and Shafts
- Creating Ramps
- Placing Railings on a Host
- Creating Railings by Sketch
- Modifying Railings
- Understanding Railing Properties
- Customizing Railing Properties

### Site Tools

- Introducing Site Tools

- Creating a Toposurface Using Points
- Creating a Toposurface from CAD
- Creating a Toposurface from a Points File
- Managing Site Settings
- Creating Toposurface Subregions and Split Surfaces
- Creating a Building Pad
- Creating a Graded Region
- Creating Site and Parking Components
- Creating Property Lines and Contour Labels

### Schedules and Tags

- Understanding Parameters
- Creating Project Parameters
- Creating Shared Parameters
- Understanding Schedules and Tags
- Placing Element Tags
- Tagging Beams
- Tagging Reinforcement
- Customizing Rebar Abbreviations
- Placing Multi-Rebar Annotations
- Working with Material Tags
- Creating a Schedule and Specifying Fields
- Modifying Schedules with Filters
- Modifying Schedules with Sorting and Grouping
- Modifying the Formatting of Schedule Titles and Headers
- Modifying Schedule Formatting
- Modifying the Schedule Appearance

- Placing Schedules on a Sheet
- Working with Material Takeoff Schedules
- Working with Calculated Values and Conditional Formatting in Schedules
- Working with Graphical Column Schedules
- Creating and Managing a View List
- Importing and Exporting Schedule Views

### Annotation

- Working with Text Annotations
- Using Keyboard Controls and Adding Symbols to Text
- Checking Spelling in a View
- Finding and Replacing Text
- Modifying Text Type Properties
- Creating Keynotes
- Modifying Keynotes and Keynote Settings
- Creating a Keynote Legend
- Working with Symbols and Note Blocks
- Working with Legends
- Managing Arrowheads
- Placing the Span Direction Symbol

### Dimensions and Constraints

- Understanding Dimensions and Constraints
- Using Temporary Dimensions
- Modifying Temporary Dimension Settings
- Working with Permanent Dimensions
- Modifying Dimensions

- Modifying Dimension Graphics
- Modifying Dimension Text Appearance
- Creating and Modifying Dimension Styles
- Locking Dimensions
- Controlling Dimensions Using Equality Constraints
- Controlling Dimension Units
- Dimensioning Entire Walls
- Working with Spot Elevations
- Working with Spot Coordinates
- Working with Spot Slopes

### Drafting and Detailing

- Understanding Detailing
- Loading and Placing Detail Components
- Placing Repeating Details
- Creating a Repeating Detail Type
- Creating Detail Lines
- Specifying Draw Order
- Showing Hidden Lines in a Detail View
- Modifying the Cut Profile of Model Elements
- Overriding Linework in a View
- Creating Filled Regions
- Creating Masking Regions
- Creating Batt Insulation
- Placing Annotations in Detail Views
- Leveraging Detail Groups
- Saving Views to a File
- Inserting Views and 2D Elements from a File

- Creating Model Text and Model Lines

### View Graphics

- Working with Visual Styles
- Understanding Scale and Detail Level
- Understanding Plan View Range
- Understanding View Discipline
- Understanding View Templates
- Creating View Templates
- Applying and Assigning View Templates
- Creating View Types
- Understanding Object Styles
- Understanding Visibility and Graphic Overrides
- Creating Element and Category Overrides in a View
- Creating Filter Overrides
- Understanding Temporary Hide or Isolate and Viewing Hidden Elements
- Using Temporary View Properties
- Understanding Crop Regions
- Creating a Non-Rectangular Crop Region
- Understanding Annotation Crop Regions
- Configuring System Family Coarse Scale Cut Patterns

### Views and Sheets

- Creating Plan Views
- Creating a Plan Region
- Creating Building Elevation Views
- Creating Framing Elevation Views
- Changing the Elevation Symbol

- Creating Section Views
- Segmenting Section and Elevation Views
- Creating Callout Views
- Sketching a Callout View
- Creating Drafting Views
- Creating a Reference View
- Duplicating Views
- Creating Matchlines and View References
- Creating Additional View References
- Creating and Using Sheets
- Working with Viewports on Sheets
- Aligning Views on Sheets with a Guide Grid
- Using a Sheet List and Placeholder Sheets
- Creating Custom Titleblocks
- Creating a Key Plan
- Managing Sheet Issues and Revisions
- Creating Revision Clouds and Tags
- Adding a Revision Schedule to a Titleblock
- Creating Supplemental Drawings

### Printing and Publishing

- Understanding Printing and Publishing
- Printing and Managing Print Settings
- Printing to PDF
- Publishing Files to Buzzsaw

### Managing Your Projects

- Managing Project Information

- Specifying the Location, Weather and Site
- Managing Project Browser View Organization
- Using Parameters and Filters for Browser Organization
- Managing Project Browser Sheet Organization
- Working with Coordinate Systems
- Relocating a Project
- Rotating True North and Project North
- Mirroring a Project
- Understanding Project Template Files
- Transferring Project Standards
- Deleting Unused Items from a Project
- Setting the Starting View

### Managing Settings

- Understanding Model and Drafting Patterns
- Managing Fill Patterns
- Managing Materials and Material Libraries
- Managing Material Properties and Material Assets
- Managing Line Styles
- Managing Line Weights
- Managing Line Patterns
- Managing Halftone and Underlay Settings

### Design Analysis

- Introducing the Analytical Model
- Controlling the Analytical Model Visibility Settings

- Modifying the Analytical Model Properties
- Adjusting the Analytical Model
- Confirming Analytical Nodes are Connected
- Analytical Structural Settings
- Running Analytical Model Checks
- Creating Loads

### Worksharing

- Introducing Worksharing Concepts
- Understanding Worksharing Terminology
- Enabling Worksharing in a Project File
- Creating the Central Model
- Creating a Local Model
- Creating Worksets
- Understanding Workset Visibility
- Understanding How Central and Local Files Communicate
- Closing a Workshared Project
- Understanding Editing Requests
- Understanding the Active Workset
- Understanding Worksharing Display Modes
- Specifying Open Worksets
- Managing Worksets in Linked Revit Files
- Working Offline and Editing at Risk
- Viewing the Workshared Project History
- Rolling Back Workshared Projects
- Detaching a File from Central



## Collaboration

- Linking Revit Models
- Controlling the Coordinates in Linked Revit Models
- Controlling the Display of Elements in a Linked Model
- Scheduling Elements from a Linked Model
- Tagging Elements in a Linked Model
- Monitoring and Coordinating Changes within a Single Project
- Using Copy and Monitor in a Single Project
- Using Copy and Monitor with Linked Projects
- Performing a Coordination Review with Linked Models
- Checking For Interferences

## Groups

- Introducing Groups
- Creating a Model Group
- Creating and Managing Model Groups and Attached Detail Groups
- Creating Detail Groups
- Editing Groups
- Making Parameters Vary Between Groups
- Excluding Elements from Groups
- Converting Groups to Links
- Saving and Loading Groups

## Phases

- Introducing Phases
- Understanding Phases
- Managing Phases

- Understanding Phase Filters and Graphic Overrides
- Assigning Phases and Phase Filters to a View
- Demolishing Elements
- Establishing Phases in Project Templates

## Design Options

- Introducing Design Options
- Working with Design Options and Option Sets
- Editing Design Options
- Duplicating and Deleting Design Options
- Creating Design Option Views
- Understanding the Impact of Design Options on Documentation
- Promoting and Accepting Design Options

## Construction Modeling

- Understanding Construction Modeling
- Creating Parts
- Modifying Parts
- Controlling the Visibility of Parts
- Dividing Parts
- Dividing Parts with Gaps and Profiles
- Merging and Excluding Parts
- Scheduling Parts
- Understanding Wall Joins and Parts
- Creating Parts from Linked Models
- Creating Assemblies
- Placing and Modifying Assembly Instances

- Creating Assembly Views
- Acquiring Assembly Views
- Modifying Assembly Views

## Advanced Modeling

- Introducing the In-Place Modeling Tools
- Creating Solid Extrusions and Blends as an In-Place Component
- Creating Solid Revolves as an In-Place Component
- Creating Solid Sweeps and Swept Blends as an In-Place Component
- Creating Void Forms as an In-Place Component
- Creating Complex Forms with Cut and Joined Geometry
- Understanding Adaptive Components
- Using Adaptive Components to Create Building Elements

## Presentation Views

- Creating 3D Views
- Understanding 3D View Properties
- Specifying the Background for a 3D View
- Rotating a 3D View
- Using Section Boxes in 3D Views
- Creating a Perspective 3D View
- Modifying the Perspective Camera Position
- Storing a 3D View Home and Front Orientation
- Orienting 3D Views to Other Views
- Locking 3D Views for Annotation
- Creating an Exploded View
- Creating Decals

- Managing Decal Types
- Managing Photographic Exposure
- Managing Shadows

### Interoperability

- Importing and Managing Image Files
- Linking and Importing CAD Files
- Controlling Line Weights in Imported CAD Files
- Controlling the Coordinates of a Linked CAD File
- Using CAD Files to Create Building Model Objects
- Working with Autodesk Exchange Files (ADSK)
- Working with Point Clouds
- Exporting to DWF
- Working with DWF Markups
- Exporting to 2D CAD Formats
- Exporting to 3D CAD
- Exporting Views to Image Files
- Exporting to 3ds Max
- Exporting to IFC
- Exporting to ODBC
- Exporting Family Types

### Family Creation

- Understanding Loadable Families
- Introducing Family Creation
- Understanding the Family Editor
- Working with Tag Families
- Creating a Custom Annotation Tag
- Creating a Custom View Tag

- Working with Component Families
- Introducing Form Creation
- Creating Solid Extrusions and Blends
- Creating Solid Revolves
- Creating Solid Sweeps and Swept Blends
- Creating Void Forms
- Creating Reference Planes and Reference Lines
- Creating Dimension and Parameter Constraints
- Creating Family Geometry
- Understanding Family Geometry Display Settings
- Creating Family Types
- Working with Families in a Project
- Working with Hosted Families
- Creating a Hosted Family
- Creating and Grouping Family Parameters
- Creating Shared Parameters
- Understanding Reporting Parameters
- Creating Symbolic and Model Lines
- Creating Controls
- Creating a Masking Region
- Creating Parameter Formulas
- Managing Nested Families
- Creating Linked Parameters
- Creating a Type Catalog

### System Requirements

#### DVD Version Requires

- Microsoft Windows® XP, Vista, 7
- 512 MB Ram
- 1GHz Processor or faster
- 1024x768 color display
- Sound Card and Speakers
- Up to 8GB hard disk space required for installation
- DVD-ROM drive for install only
- Mouse (or pointing device) needed for navigation

#### Online Version Requires:

- Internet Browser
- Adobe® Flash Plugin
- InternetConnection (High-Speed Recommended)

#### CADLearning is Developed by:



## About CADLearning

CADLearning delivers instruction through e-books, self-paced video tutorials, exercise files and assessments that are designed to improve familiarity and fluency with leading CAD and BIM software programs.

Professionals in architecture, engineering, construction, automotive and transportation, manufacturing, utilities, communication, government and education can effectively leverage CADLearning for self-paced learning, as an ongoing resource, and as a help tool. CADLearning is developed by 4D Technologies, LLC.

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