AUTODESK

Autodesk Certified Professional in Revit for Electrical Design

Exam objectives

Target audience

The Autodesk Certified Professional (ACP) certification is designed for candidates who have advanced skills and can solve complex challenges in workflow and design. This type of experience typically comes from having worked with the software on a regular basis for at least two years, or equivalent to approximately 400 hours (minimum) to 1,200 hours (recommended) of Autodesk software experience. Certification at this level demonstrates a comprehensive skill set that provides an opportunity for individuals to stand out in a competitive job market.

The candidate will have demonstrated advanced modeling skills in Revit and will be knowledgeable in relevant workflows, processes, and project objectives. The candidate will have performed routine tasks involved in their job role with limited assistance from peers, product documentation, and support services. The minimally qualified candidate will have successfully created and edited project documents, manipulated views and their behaviors, performed basic family editing tasks, used worksharing, and leveraged Revit data and documentation tools to produce quality deliverables in projects. These skills are typically required for jobs as electrical engineers or designers in architecture or MEP engineering firms or a design-build environment.

Prerequisite skills

It's expected that candidates will already know how to:

- Navigate the user interface.
- Identify areas of the browser.
- Transition through various environments.
- Know the available file types for import of manufacturer parts and workholding.
- Display a part or assembly.
- Create fully constrained sketches.
- Common design features.
- Identify various planes and axes.

- Identify and create workholding devices for computer numerical control (CNC) milling.
- Create a distributed design.
- Fully constrain assembly parts.
- Create a CAM setup for CNC Milling.
- Use Probing to locate a work coordinate system (WCS).
- Create and manage a tool library.
- Calculate toolpath parameters including federate and spindle speed.
- Use CAM Expressions.
- Create 3-axis toolpaths for roughing and finishing.
- Optimize toolpath parameters.
- Create toolpath templates and patterns.
- Modify toolpath states such as suppress or protect.
- Simulate toolpaths.
- Create numerical control (NC) programs.
- Create a setup sheet.
- Modify post processor options.
- Export NC code for a single setup.

Exam objectives

Here are some topics and software features that may be covered in the exam.

1. Modeling

1.1. Add equipment and fixtures

1.1 a Add electrical equipment

i. May include panelboard, switchgear, transformers, and low voltage panels.

1.1 b Add devices and light fixtures

i. May include electrical fixtures and communication, data, fire alarm, lighting, nurse call, security, and telephone devices.

1.2. Create electrical systems

1.2 a Create and edit circuits

i. May include creating equipment and branch circuits, creating low voltage circuits, and editing circuit paths.

1.2 b Create and edit switch systems

1.2 c Use the System Browser

i. May include finding specific circuits, devices, and configuring columns.

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1.3. Model connecting geometry

1.3 a Add conduit and cable tray

i. May include configuring type settings and fittings.

1.3 b Add wires

i. May include creating and editing wire types, controlling tick marks, number of conductors, and homeruns.

2. Documentation

2.1. Manipulate views

2.1 a Assign, apply, and edit view templates and visibility/graphic overrides

i. May include the use of view types and templates and the implications of altering existing view templates; temporary view properties and element visibility (not including analytical); filters; graphic overrides for linked files and object styles; and controlling workset visibility.

2.1 b Manage, edit, and apply panel schedule templates

i. May include creating new templates.

2.1 c Produce schedules

i. May include building components, key schedules, and embedded schedules.

2.1 d Use miscellaneous view features

i. May include view selection boxes, scope boxes, view range, plan regions, browser organization, import views, phase filters, overrides, and more.

2.1 e Work with sheets, title blocks, and revisions

i. May include revision numbering; issuing a revision; showing the tag and/or cloud; and settings such as per project/per sheet.

2.1 f Understand all view types

i. May include drafting, legend, callout, section/detail, elevation, dependent, and 3D views.

2.1 g Apply phasing

i. May include using element phase settings, phase filters, and phase graphics overrides.

2.2. Use annotations

2.2 a Use tags

i. May include equipment, device, and circuit tags.

2.2 b Use keynotes and note blocks

i. May include keynoting settings, user keynote table formatting, and keynote legend.

3. Families

3.1. Model family elements

3.1 a Define MEP connectors

i. May include electrical, cable tray, and conduit.

3.1 b Understand family types: System and component

i. May include conduit/cable tray types, loadable families, and type catalogs.

3.1 c Understand family creation workflow

i. May include constraints, reference planes, lookup tables, geometry creation, nested families, and a basic knowledge of formulas.

3.1 d Configure light sources

3.1 e Determine family category and part type

i. May include adding, renaming, and setting family types, and editing properties of a family type.

3.1 f Differentiate between family hosting types

3.1 g Configure element visibility settings

i. May include object styles, subcategories, detail level, and element visibility.

3.2. Model annotation families

3.2 a Create annotation families and tags

i. May include creating labels and tags and combining parameters.

3.2 b Define symbols and annotations in a family

i. May include nested generic annotations and symbolic lines.

3.3. Add parameters

3.3 a Use and understand parameter types

i. May include family, shared, system, project, global, and instance and type parameters.

3.3 b Distinguish between parameter disciplines and data types

4. Analysis

4.1. Perform analysis

4.1 a Perform load calculations

i. May include specifying load, power factor, and load classification.

4.1 b Perform a conceptual lighting analysis

i. May include using spaces and light sources to estimate illumination.

4.1 c Configure electrical settings

i. May include load classifications and demand factors.

5. Collaboration

5.1. Use reference files

5.1 a Understand the difference between imported and linked files

i. May include CAD files, images, PDFs, and positioning.

5.1 b Manage linked files

i. May include adding at the proper position, removing, loading, and reloading.

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5.2. Define worksharing concepts

5.2.a Understand worksharing concepts

i.May include display modes, worksets, central file, file synchronization, element borrowing/relinquishing.

5.3. Collaborate with others

5.3 a Export to different formats

i. May include file formats and export options.

5.3 b Check a model for interferences

i. May include understanding the principles and importance of Interference checks.

5.3 c Use copy and monitor data and monitor elements

i. May include how to conduct a coordination review.

5.3 d Assign, display, and accept primary design options

i. May include switching between design options and option sets.

5.3 e Transfer project standards