



# AutoCAD Electrical Fundamentals with NFPA Standards

## Course Length: 3 Days

The AutoCAD Electrical: Fundamentals with NFPA Standards course is designed for those using AutoCAD Electrical with a Windows operating system. This course is not designed for the AutoCAD for Mac software.

The AutoCAD Electrical: Fundamentals with NFPA Standards training course covers the indispensable core topics for working with the AutoCAD Electrical software. In this course, you will learn how to use many of the powerful electrical drawing creation tools in the AutoCAD Electrical software. You will create schematic drawings (ladder logic and point to point), panel drawings, and PLC-I/O circuits using automated commands for symbol insertion, component tagging, wire numbering, and drawing modification. In addition, you are introduced to methods of customizing AutoCAD Electrical symbols, circuits, and databases. Other topics covered include titleblock linking, reporting tools, templates, and project files.

## Topics Covered:

- Understanding project files
- Creating and editing schematic and panel drawings
- Working with PLC symbols
- Creating custom symbols
- Generating reports

## Prerequisites:

Before taking this course, students need to have a good working knowledge of the AutoCAD software and electrical terminology.

Course description shown for AutoCAD Electrical 2022. Topics, curriculum, and/or prerequisites may change depending on software version.

## Learning Guide Contents

### Chapter 1: Introduction to AutoCAD Electrical

- 1.1 What Is AutoCAD Electrical?
- 1.2 Drawing Files
- 1.3 Electrical Components and Wires
- 1.4 Design Methodologies

### Chapter 2: Project Files

- 2.1 Project Manager Interface
- 2.2 Accessing Project Files
- 2.3 Opening a Drawing
- 2.4 Creating a Drawing
- 2.5 Add a Drawing to a Project File
- 2.6 Managing Drawings in Projects
- 2.7 Project Manager Drawing List

### Chapter 3: Schematics I - Single Wires/Components

- 3.1 Referencing
- 3.2 Ladders
- 3.3 Insert Wires
- 3.4 Edit Wires
- 3.5 Add Rungs
- 3.6 Wire Setup
- 3.7 Wire Numbers
- 3.8 Source and Destination Signal Arrows
- 3.9 Insert Component
- 3.10 Parent/Child Components

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## Chapter 4: Schematics II - Multiwire and Circuits

- 4.1 Dashed Link Lines
- 4.2 3-Phase Ladders
- 4.3 Multiple Wire Bus
- 4.4 3-Phase Components
- 4.5 3-Phase Wire Numbering
- 4.6 Cable Markers
- 4.7 Fan In/Out
- 4.8 Insert Saved Circuits
- 4.9 Save Circuits to Icon Menu
- 4.10 WBlock Circuits
- 4.11 Copy Circuit
- 4.12 Move Circuit
- 4.13 Circuit Clipboard
- 4.14 Circuit Builder

## Chapter 5: Editing Commands

- 5.1 Edit Component
- 5.2 Updating Drawings
- 5.3 Scoot
- 5.4 Move Component
- 5.5 Copy Component
- 5.6 Align
- 5.7 Delete Component
- 5.8 Surfer Command
- 5.9 Copy Catalog Assignment
- 5.10 Copy Installation/Location Code Values
- 5.11 Attribute Editing Commands

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## Chapter 6: Panel Drawings

- 6.1 Insert Footprint (Icon Menu)
- 6.2 Insert Footprint (Schematic List)
- 6.3 Insert Component (Panel List)
- 6.4 Edit Footprint
- 6.5 Assign Item Numbers
- 6.6 Add Balloons

## Chapter 7: Terminals

- 7.1 Insert Terminal Symbols
- 7.2 Multiple Level Terminals
- 7.3 Multiple Insert Component Command
- 7.4 Insert Jumpers
- 7.5 Terminal Strip Editor
- 7.6 DIN Rail Command

## Chapter 8: PLC Symbols

- 8.1 Insert PLC (Parametric)
- 8.2 Insert PLC (Full Units)
- 8.3 Insert Individual PLC I/O Points
- 8.4 PLC Based Tagging
- 8.5 Spreadsheet to PLC I/O Utility

## Chapter 9: Point-to-Point Wiring Drawings

- 9.1 Insert Connectors
- 9.2 Edit Connectors
- 9.3 Insert Splices
- 9.4 Insert Multiple Wires
- 9.5 Bend Wires

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## Chapter 10: Symbol Creation

- 10.1 Schematic Symbols
- 10.2 Naming Convention
- 10.3 Icon Menu Wizard
- 10.4 AutoCAD Electrical Databases
- 10.5 Project Database
- 10.6 Catalog Database
- 10.7 Footprint Lookup Database
- 10.8 PLC Database

## Chapter 11: Titleblocks

- 11.1 Update Titleblocks
- 11.2 Titleblock Setup

## Chapter 12: Reporting Tools

- 12.1 Create Reports
- 12.2 Configure Report Templates
- 12.3 Running Automatic Reports
- 12.4 Electrical Audit

## Chapter 13: Settings and Templates

- 13.1 Project Properties
- 13.2 Drawing Properties
- 13.3 Panel Drawing Configuration
- 13.4 Template Files
- 13.5 Sharing Symbol Libraries and Databases

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## Chapter 14: Drawing Update Tools

- 14.1 Project-Wide Update/Retag
- 14.2 Project-Wide Utilities
- 14.3 Plot Project
- 14.4 Export to Spreadsheet
- 14.5 Update from Spreadsheet
- 14.6 Copy Project
- 14.7 Swap/Update Block
- 14.8 Mark/Verify Drawings

## Appendix A: Skills Assessment

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## Cancellation Policy

The following cancellation policy shall apply to all training engagements, LIVE Online, Consulting Services and Dedicated/Custom Training:

- Company reserves the right to reschedule or cancel the date, time and location of its class at any time. In the event that a Training Class is cancelled by Company, Customer is entitled to a full refund. Company shall not be responsible for any other loss incurred by Customer as a result of a cancellation or reschedule.
- For Customer cancellations when written notice is received (i) at least ten (10) business days in advance of the class, the Customer is entitled to a full refund of its payment or reschedule enrollment, (ii) less than ten (10) business days, Customer shall not be entitled to a refund, but shall receive a class credit to be used within three (3) months of the date of the original class.
- Student substitutions are acceptable with at least two (2) days prior notice to the class, provided substitution meets course prerequisites and is approved by Company's Training Coordinator ([trainingcoordinator@rand.com](mailto:trainingcoordinator@rand.com))
- For all Training orders, cancellation notices must be submitted to [trainingcoordinator@rand.com](mailto:trainingcoordinator@rand.com). Company is not responsible for any error in the delivery of the email notice. In the event of any reschedule of Consulting Services and/or Dedicated/Custom Training by Customer, Company will invoice Customer for all non-cancellable travel expenses.

To request more information or to see training locations, visit [www.imaginit.com/contact-us](http://www.imaginit.com/contact-us).