

### ➤ Brief Description

This workshop and accompanying manual is intended for engineers and technicians who need to have a practical knowledge for ACAD and ACAD Electrical Like create schematic drawings, panel drawings, and PLC/IO circuits using automated commands for symbol insertion, component tagging, wire numbering, and drawing modification.

Students will be introduced to methods to customize AutoCAD Electrical symbols, circuits, and databases. Other topics covered include title block linking, reporting tools, templates, and project files etc.

The objectives of the workshop and manual are for you to be able to:

- ✚ Be able to understand basic ACAD concepts and Design tools.
- ✚ Be able to understand basic ACAD Electrical Concepts and Design tools.
- ✚ Benefits of Electrical-Specific CAD. Why to Move from ACAD to ACAD Electrical.
- ✚ Be able to interpret and understand electrical systems drawings.
- ✚ Be able to understand international standard symbols libraries i-e JIC, IEC, GB, JIS and AS.
- ✚ Be able to understand Automation in ACAD-Electrical i-e Automatic Wire Numbering, Component Tagging, Project Reports, BOM, Real Time error checking, PLC I/Os, Automatic Tracking of components parts etc.

- ✚ Design and interpretation of Electrical Drafting standards like JIC, IEC, GB, IEEE etc.

### Course Documentation

- ✚ Training material documents (Hard form at the time of registration)
- ✚ Course Exercises
- ✚ Post Course open Book test
- ✚ Complete Project Designing in ACADE.

### ➤ Software installation and Setup

- ✚ ACAD Electrical 2015

### Course Contents

#### ➤ Introduction to AutoCAD General

- ✚ AutoCAD General Overview
- ✚ ACAD General Environment
- ✚ ACAD General Control tools Panels.
- ✚ ACAD Drafting Design Tools and commands.
- ✚ ACAD Drafting Design Tools Controls

#### ➤ Introduction to AutoCAD Electrical

- ✚ AutoCAD Electrical Overview
  - What is AutoCAD Electrical?
  - Drawing Files
  - Electrical Components and Wires
  - Design Methodologies in AutoCAD Electrical
- ✚ Project Manager
  - Project Files
  - Project Manager Interface
  - Accessing Project Files
- ✚ Projects and Drawing Files
  - Opening a Drawing
  - Create a Drawing
  - Add a Drawing to a Project File
  - Managing Drawings in Projects
  - Project Manager Drawing List

#### ➤ Schematic Drawings

- ✚ Schematic Drawing formats
  - Ladder Style Diagrams
  - Point-to-Point Diagramming
- ✚ Wires
  - Insert Wires
  - Edit Wires
  - Add Rungs
  - Wire Setup
  - Wire Numbers
  - Source and Destination Signal Arrows
- ✚ Schematic Symbols
  - Symbols Libraries
  - Switching Between Libraries
  - Insert Component
  - Parent/Child Components
  - Components editing
  - Swapping Libraries
  - Linking Components
- ✚ 3-Phase Circuits
  - 3-Phase Ladders
  - Multiple Wire Bus
  - 3-Phase Components
  - 3-Phase Wire Numbering
- ✚ Cables Markers and Fan In/Out
- ✚ Reusing Circuits
  - Circuit Builder
  - Insert Saved Circuits
  - Save Circuits to Icon Menu
  - W block Circuits
  - Move Circuit
- **Editing Commands**
  - ✚ Component Editing
    - Edit Component
    - Project Task List
    - Scoot
    - Move Component
    - Copy Component
    - Align
    - Delete Component
  - ✚ Surfer Command
- ✚ Attribute Editing Commands
- **Terminals**
  - ✚ Terminal Schematic Symbols
    - Insert Terminal Symbols
    - Multiple Level Terminals
    - Multiple Insert Component Command
    - Insert Jumpers
  - ✚ Terminal Panel Footprints
    - Terminal Strip Editor
    - DIN Rail Command
- **PLC I/Os and Symbols**
  - ✚ PLC Symbols
    - Insert PLC (Parametric)
    - Insert PLC (Full Units)
    - Insert Individual PLC I/O Points
    - PLC Based Tagging
- **Point-to-Point Wiring Drawings**
  - ✚ Connectors and Splices
    - Insert Connectors
    - Edit Connectors
    - Insert Splices
  - ✚ Wiring Tools
    - Insert Wires
    - Bend Wires
- **Symbol Creation**
  - ✚ Symbol Builder
    - Schematic Symbols
    - Naming Convention
  - ✚ Icon Menu Wizard
- **Databases**
  - ✚ AutoCAD Electrical Databases
  - ✚ Project Database
  - ✚ Catalog Database
  - ✚ Footprint Lookup Database
  - ✚ PLC Database
  - ✚ Pin List Database



- ✚ Terminal Properties Database
- ✚ Project-Wide Update/Retag
- ✚ Project-Wide Utilities
- ✚ Plot Project
- ✚ Export and Update from Spreadsheet
- ✚ Copy Project
- ✚ Swap/Update Block
- **Panel Diagram layout**
  - ✚ Footprints and Symbols
  - ✚ Converting footprints from PDF to DWG
  - ✚ Using catalog for footprints.