

Electrical Systems Design Level 1 Training

Course Structure

Mode: Hybrid (Virtual + Physical)

Duration: 40 hours

- Virtual Sessions: 3 days/week, 2 hours/session for 4 weeks
- Practical Sessions: Saturdays, 4 hours/session for 4 weeks

Tools Covered: AutoCAD Electrical / EPLAN

Key Deliverables: Electrical schematics, Bill of Materials (BOM), physical prototype, annotated documentation

Course Overview:

This intensive short course introduces participants to practical electrical engineering design, blending theory, modern design software, and hands-on practice. Learners will gain the skills to tackle real-world design challenges, including:

- Understanding electrical standards and codes
- Designing schematics and panels
- Conducting load analysis
- Preparing professional documentation

By the end of the program, participants will be confident in both **digital design** and **physical implementation** of electrical systems.

This training gives learners the opportunity to:

- ❖ Learn from Industry experts
- ❖ Engage in hands-on software use + practical projects
- ❖ Interact with globally recognised standards (IEC, BS, KEBS, EPRA, KEGC)

Course Objectives:

This course is designed to enable learners to:

1. Build a foundation in Electrical Engineering (EE) design theory, codes, and diagram types
2. Apply software tools to create electrical schematics
3. Perform load calculation and documentation preparation
4. Design and implement key electrical systems in industry i.e Motor Control Centres/Board, Power Factor Correction (PFC) Panels, Electrical Panels, Earthing Systems.

Learning Outcomes:

By completing this program, participants will be able to:

1. Interpret and apply electrical design standards
2. Create functional schematics using modern tools
3. Analyze electrical loads and develop accurate Bill of Materials (BOMs)
4. Translate electrical designs into physical builds
5. Use design software confidently for practical applications in electrical systems design

Course Topics:

1. Electrical Systems: Definitions & Types
2. Original Equipment Manufacturers (OEMs) & their Products
3. System Design Information, Technical Specification & Parameters
4. Electrical Systems Design Standards, Codes & Regulations
5. Electrical Systems Design Platforms (AutoCAD Electrical, EPLAN)
6. Best Practice - Safe & Efficient Electrical System Design
7. Electrical Systems Standard Design Procedure
8. Industrial-Grade Systems Design
9. Testing, Installation, Commissioning, Maintenance & Upgrades
10. Role of System Design Engineers / Electrical Schematic Designers

Who Should Enroll

- Electrical Engineers & Technicians
- Students aspiring to practice in design
- Project Managers & Consultants
- Industrial Professionals seeking skill enhancement

Training Approach

Our comprehensive 4-week program equips participants with the knowledge and skills to grow from beginner to expert level. You will:

- Learn design workflows step by step
- Work on real-world projects
- Develop professional-grade documentation
- Gain confidence in system testing-commissioning & compliance

Training Benefits for Individuals

- Boost employability & career advancement for engineers and technicians
- Acquire practical, industry-relevant skills
- Gain confidence in both digital and physical system design

Training Benefits Companies

Operational Efficiency & Productivity

- Engineers trained in modern design software streamline workflows, increasing throughput.
- Teams can independently design, interpret, and implement electrical systems without waiting on external consultants.

Energy Saving & Cost Reduction

- Proper load analysis and power factor correction reduce energy wastage, lowering utility bills.
- Well-documented systems minimize downtime, support ease to upgrade and cut maintenance costs by preventing recurring faults.

Compliance & Risk Management

- Staff gain expertise in global best practice and applicable local standards, ensuring systems meet regulatory requirements.
- Audit-ready documentation reduces exposure to penalties and strengthens credibility with regulators and clients.

Safety & Reliability

- Modernized electrical systems protect personnel and equipment, reducing accidents and liability risks.
- Improved automation and control systems enhance reliability, ensuring production continuity.

Talent Development & Retention

- Investing in staff skills boosts morale and loyalty, reducing turnover.
- Engineers become more versatile, capable of handling internal upgrades, troubleshooting, and innovation.

