

ELECTRICAL DESIGN AND DRAFTING

Overview: Electrical design entails planning, creating, testing or supervising the development and installation of electrical equipment, including lighting equipment, power systems, power distribution, fire and life safety systems. Electrical drafting, is a type of technical drawing that shows information about power, lighting, and communication for an engineering or architectural project.

DAY 1

Session 1: Fundamentals of Electricals

- Types, source, generation and transmission of electricity.
- National electricity rules.
- National Indian Codes NEC& NBC

Electrical equipment's and its application in installations.

- Control and measuring devices
- Circuit protector devices
- Transformers and diesel generators
- Bus bars, bus ducts, cables(HT/LT), wire motors and pumps.
- Ear thing and Grounding.

Session 2: Major Electrical Loads used in Installations.

- Lighting Load
- Utility Power Load
- HVAC load like FCU and Fans
- Pumps, booster pumps, firefighting and lift load.

Electrical Design Calculations.

- Maximum demand calculation.
- Load balancing sheet- lighting load and utility load
- Transformer and DG sizing calculation
- Capacitor, Cable and Voltage calculations
- Earthing and lighting calculations

DAY 2

Session 1: Study of design structure for preparation of Electrical layouts.

- Study of various loads- lighting load and Raw power loads
- Study of wiring for various loads.

Lighting Software

- LUX calculation using DIALUX software.

Session 2: Practical Examples

- Electrical design of one floor

AutoCAD drafting with Problem Description shall be given to the students