

Electrical Design And Lighting Design Internship Curriculum:

Introduction into the Field of MEP

- Introduction to electrical design
- Why electrical in MEP design?
- Codes & standards NBC, IEC, IS, N EC, DEWA, ADEWA, NEMA
- Understanding building orientation
- Types of AutoCAD plans
- Luminaire calculation.
- Introduction to lighting system.
- Concepts of lighting design.

Selection of lux for lighting design.

- Room index calculation.
- Manual calculation for Interior lighting
- Practical example on lighting design.
- Ceiling fan selection
- Exhaust fan selection
- Socket selection
- conditioning system.
- Relux or Dialux software for lighting design
- Relux software for interior lighting design
- Relux software for exterior lighting design
- Relux software for street lighting design
- Electrical load calculation
- Estimate the total connected load (w or kw)
- Calculate the total demand (w or kw}.

- Importance of circuits
- Circuit types
- Light circuit design.
- Power circuit design.
- Introduction to circuit breakers.
- Properties and types of circuit breakers.
- Circuit breaker selection
- Power network Distribution
- Importance of phase distribution
- When to select single phase and three phase
- Load distribution to each phase
- Balancing 3 phases
- Distribution board design
- Introduction to Distribution boards
- Distribution board wiring
- Selection of Distribution board
- Types of Distribution boards
- Distribution board sizing
- Selection of cables
- De-rating current calculation
- Cable sizing
 - Voltage drops calculation (VD)
- Selection of cable insulation
- Conduits and cable tray, Conduit types, Conduit sizing
- Different types of cable tray, Cable tray sizing

Transformer selection, Brief introduction to transformers

- Types of transformers, Types of transformer connection
- Transformer sizing (kva)
- Diesel Generator design, need for a Dg, Working of Dg
- Diesel tank sizing
- Power factor improvement
- Why power factor to be improved?
- Difference between reactive power and real power, Need for reactive power
- Capacitor bank sizing
- Inverter sizing
- Battery sizing using DOD values
- solar Panel sizing
- Lightning protection
- To calculate the total coverage area
- Lightning protection design
- Termination of lightning protection
- Need for earthing in power system
- Types of earthing
- Earthing pit designing
- Earthing system design
- Earthing cable sizing