

MEP course-syllabusHVAC:

- Overview of Industry and Scope of HVAC
- Heat load calculation & psychrometric chart
- Normal, Split, cassette and VRV, chiller, AHU
- Ducting: friction & velocity method
- Preparation of BOQ
- Schematic drawing
- Pipe sizing, selection & design
- Diversity factor
- Basic electrical drawing
- Damper's
- Pump head calculation
- Ventilation system (fresh & exhaust)
- Machinery & equipments
- Site visit

Electrical

- Electrical Generation, Transmission and Distribution
- Component Description: *Solar Panels, Inverters, Deep Cycle Solar Batteries, Solar Regulator*
Sizing Information
- Solar Energy usage in various buildings
- Electricity Distribution Point: The Circuit Breaker Box (Wiring Concept)
- Role of an Electrical Design Engineer
- General Design Philosophy
- Electrical Services Design Philosophy ; Electrical supply & Electricity Switch Rooms
- Primary & Power Electrical Distribution
- Design standards
- Preparation of Load Estimate.
- Selection of transformer, DG, HV/LV switches gears.
- Transformer sizing, DG sizing.
- HT & LT Cable sizing.
- Designing of overall single line diagrams for Lighting, Power distribution.
- Preparation of earthing schematic Diagrams.
- Preparation of transformer, DG set, electrical room layout.
- Preparing overall cable routing layout with detailing of man hole, Hume pipes for road crossing.
- Preparation of Power and Lighting Layouts.
- Preparation of cable schedule.



- Review for preparation of electrical drawings without any discrepancy.

Documentation & Layouts :

- Drawings-:
- Different Electrical Services: Lighting, Power, Fire Alarm, Emergency lighting Etc.
- Protective Services : Emergency Lighting, Fire Detection Systems , Alarm System, A Fire Alarm System , Emergency Call Systems , Lightning Protection Systems , Closed Circuit Television (CCTV) Use of CCTV , Soil & Waste
- Documentation: Survey Condition Report, Budget Estimation Report, Stage Submission Report, Specifications , Drawings, Tender/Cost/ Project Report, Final Accounts Reports, Hand Over Documents.

Plumbing: Introduction-:

Plumbing is the system of pipes, drains fittings, valves, valve assemblies, and devices installed in a building for the distribution of water for drinking, heating and washing, and the removal of waterborne wastes, and the skilled trade of working with pipes, tubing and plumbing fixtures in such systems. Fundamentals of Plumbing System

Common Fixtures Details

National Pipe Thread (NTP)

Pipe Terminology

Pipe Varieties

Nomenclature of Pipe Fittings

Pipe and Tubing

Designing of chambers, Manholes etc.

Estimation of water Supply

Soldering & Flux

Soft & Silver Soldering

Sanitary Fixtures

Types of Pipes

Sanitary Layout



Formula for flow through pipes

Water supply

Pump selection

Drainage System

- **Internal Sanitary Drainage System**

Designing Procedure

Requirement & Types for Sanitary and Internal Sanitary Drainage System

Material used for Sanitary Drainage & its Schematic Layout

Pipe Sizing & Calculation

- **External Sanitary Drainage System**

Designing Procedure

Pipe Sizing & Calculation

- **Storm Water Drainage System**

Designing Procedure

Pipe Sizing & Calculation

- **Calculations**

Slope by Manning's formula

Depth of Inspection Chamber/Manholes

Using Continuity Equation, Manning, s Formula and Rational Formula

Introduction to the specialized PHE

Schematic Layout of Water Treatment Plants



Schematic Layout of Sewage Treatment Plants

Plumbing Drawing

Working drawings

Detailing of plumbing services

Loop sizing – (Software).
