

Path to success...

AN ISO 9001 : 2015 CERTIFIED ORGANIZATION

Vedanth MEP Training Institute

We offer a carrier based course tailored to meet current industry requirements and make people employable. We undertake both classroom training and corporate training. For classroom training, we are equipped to train our students with our in house professional trainers. Corporate trainings are conducted according to requirements of both employers and employees which are customized for professional development and enhance productivity.

www.vedanthmep.com Ph.: +91-9379592999, 6363652280

HEATING, VENTILATION AND AIR CONDITIONING

1.Introduction to Building Services & HVACR

- a.What is MEP?
- b.Scope of MEP Engineer.
- c.What is HVACR.

2.Vapour Compression Cycle & Refrigerants.

- a.Primary Refrigerants.
 - Natural.
 - Synthetic.
 - Mixtures.
- b.Secondary Refrigerants.
 - Water.
 - Brines.

5.Heat Load Calculations.

- a.Carrier E20 format(Manual).
- b.Carrier E20 format Excel.
- c.HAPS.

6.Equipment selection.

7.Air Distribution Systems(ADS).

- a.Basic Air Distribution theory-
 - Elements in ADS.
- b.Duct Design Methods.
 - Constant friction method.
 - Velocity reduction method.
 - Static regain method.
- c.Duct sizing.
 - Manual Method.
 - Charts.
 - Mc.Quay Duct sizer.

8.Ventilation Systems.

- a.Positive ventilation system(Fresh air ventilation).
- b.Negative ventilation system(Exhaust air ventilation).

9.Piping.

- a.DX piping.
 - DX Pipe sizing.
 - VRV/VRF pipe sizing (Toshiba/ Mitsubishi software).
- b.Chilled water piping.
 - Accessories used in chilled water piping.
 - Chilled water pipe designing.

10.Static Pressure Calculations & Fan selection.

11.Head Calculations. & Pump selection.

12.Other Air Conditioning Concepts.

- a.Clean Room Design.
- b.Air Washer Systems.
- c.Treated Fresh air unit and Heat recovery Wheel.
- d.Non-Conventional air conditioning systems.

13.Installation and field erection practices.

14.BOQ/BOM.

15.Profiles in Air conditioning.

16.Site Visits.

17.Case Studies.

18.Design Projects

19.HVAC Drafting.

20.HVAC Design Softwares:

- a.Designing tools
 - Autocad.
 - Revit.
 - HAPS
- b.Selection tools.
 - Mc.Quay Duct sizer.
 - Mc.Quay Pipe sizer.
 - Toshiba/ Mitsubishi VRF pipe sizer.

3.Psychrometrics & Processes.

- a.Psychrometric properties of Air.
- b.Psychrometric processes.
 - Sensible heating.
 - Sensible cooling.
 - Humidification.
 - Dehumidification.
 - Heating and humidification.
 - Heating and dehumidification.
 - Cooling and humidification.

4.Classification of Air conditioning Systems.

- a.Centralized and Non centralized AC'S.

FIRE AND SAFETY

1.BASICS OF FIRE FIGHTING

- a.What is Fire?
- b.Fire Triangle.
- c.Types of Fire.
 - A, B,C,D,K

2.Codes and standards.

- a.NFPA.
- b.OSHA.
- c.NBC.
- d.IS.

3.Hazard Classification.

- a.Occupancy Classification.
 - Light Hazard.
 - Ordinary Hazard(Group 1&2).
 - Extra Hazard(Group 1&2).
- b.Commodity Classification.
 - Class1.
 - Class2.
 - Class3.
 - Class4.

4.Fire Extinguishers.

- a.Fire Extinguishers Working principle.
- b.Types of fire extinguishers.
- c.Rating of fire extinguisher.
- d.Fire extinguishing Agents.
- e.Placement of fire extinguishers.
- f.Rules while installing fire extinguishers.

5.Water Based Fire Suppression System.

- a.Sprinkler system design.
 - Classification of Sprinklers.
 - i.Operating element.
 - ii.Orientation.
 - iii.Response time.
 - iv.Temperature Rating.
 - v.Discharge.
 - Types of Sprinkler layout.
 - Pipe sizing for sprinkler system.
 - Hydraulic analysis.
- b.Hydrant Design.
 - Types of Hydrant valves.
 - i.Ø2.5" Hydrant valve.
 - ii.Ø1" Hydrant valve.
 - iii.Yard Hydrant.
 - Fire brigade connection.
 - i.2 way Fire brigade connection.
 - ii.4 way Fire brigade connection.
 - Standpipe sizing.
 - Minimum pressure requirements.
- c.Pump Selection.
 - Type of pumps.
 - i.Jockey pump.
 - ii.Sprinkler pump.

- iii.Hydrant pump.
- iv.Diesel pump.
- v.Booster pump.

- Sequence of operation.
 - Understanding Head, Flow.
 - Understanding Centrifugal Pumps.
 - Head Calculation.
 - i.Static head.
 - ii.Frictional head.
 - iii.Pressure head.
 - iv.Velocity head.
 - HP calculation.
 - Net positive suction head.
 - Pump curves.

6.Clean agent system design.

- Clean agent quantity assessment
- Cylinder sizing
- Nozzle placement
- Pipe routing and sizing

7.Fire alarm systems.

- a.Method of detection.
 - Smoke detectors.
 - i.Optical Type.
 - ii.Ionization type
 - Heat Detectors.
 - Hybrid type.
- b.Hooters.
- c.Manual call points.
- d.Wiring method.
- e.Fire alarm Panel.
 - Addressable Fire alarm Panel.
 - Non Addressable Fire alarm panel.

8.Fire fighting Drafting.

9.BOQ generation.

10.Design softwares

- Autocad.
- Revit.



PLUMBING(PHE)

1.WATER CYCLE.

2.Piping used in PHE.

- a.Piping materials.
- b.Understanding about pipe standards.
- c.Pipe fittings and joining methods.

3.Fixtures and selection.

- a.Classification of fixtures.
 - Toilet fixtures.
 - Kitchen fixtures.
 - Generic area fixtures.
- b.Fixture clearances.
 - Minimum fixtures selection using NBC Codes.

4.Fixture units.

- a.Introduction to fixture units.
- b.Classification of fixture units.
 - Supply fixture units.
 - i.Cold water fixture units.
 - ii.Hot Water fixture units.
 - iii.Combined fixture units.
 - Drain fixture units.
- c.Assigning fixture units to fixtures.

5.Supply water systems.

- a.Cold water system supply schematic.
- b.Centralized hot water supply Schematic.

6.Centralized hot water systems.

- a.Flow rate assessment for hot water.
- b.Hot water generator capacity.
- c.Storage tank capacity.
- d.Recirculation pipe design.

7.Water Distribution systems.

- a.Gravity flow.
 - Over head tank Sizing.
 - Underground tank sizing.
 - Water meter Sizing.
 - Pipe sizing using.
 - Pump selection.
- a.Hydro Pneumatic system.
 - Hydro pneumatic system Schematic.
 - Pipe Sizing velocity limitation method.
 - Pressure Vessel Selection.
 - Booster pump selection.

8.Drain system design.

- a.Drain fixture selection.
- b.Waste water drain pipe sizing.
- c.Soil water drain pipe sizing.
- d.Slope calculation.
- e.Man hole sizing.
- f.Sewage tank sizing.
- g.Vent system Design.

9.Storm water Piping and Rain water harvesting.

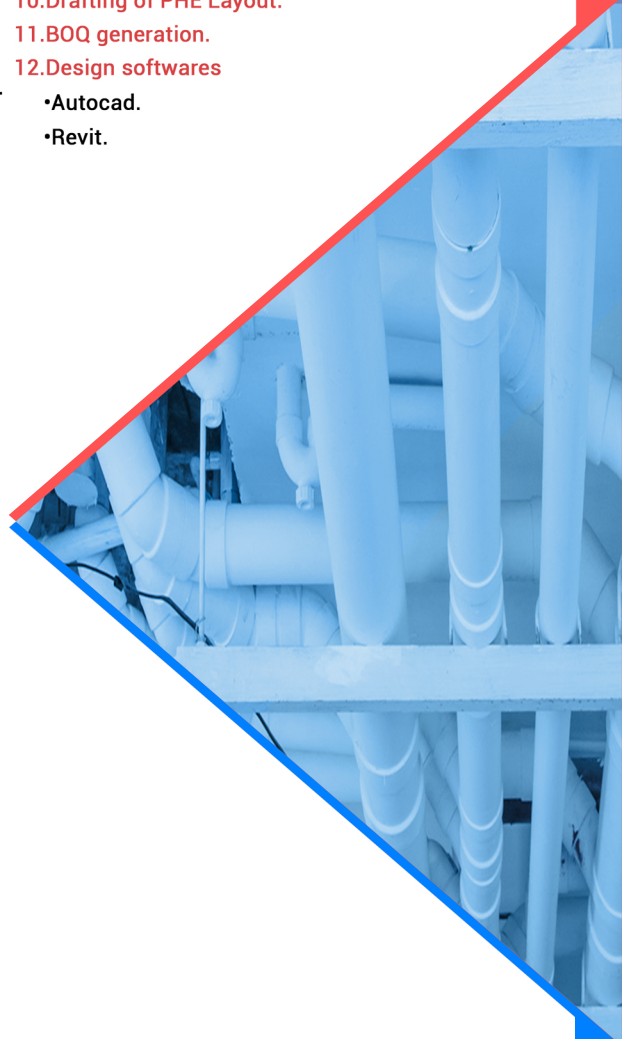
- a.Storm water pipe design.
- b.Rain water harvesting.
 - Collection.
 - Filtration.
 - Storage.
 - Recharge.

10.Drafting of PHE Layout.

11.BOQ generation.

12.Design softwares

- Autocad.
- Revit.



ELECTRICAL DESIGN.

1. Basics of electrical system.

- a. Voltage.
- b. Current.
- c. Resistance.
- d. Active power, Reactive power & Apparent Power.
- e. Alternate current & Direct current.
- f. Understanding Single Phase & Three Phase.

2. Light Selection.

- a. Lux/ candles.
- b. Understanding temperature of light.
- c. Light selection.
 - Dialux.
 - Manual.
- d. Lighting Load.

3. Cable sizing and Cable tray sizing.

- a. Understanding Voltage drop calculation.
- b. Understanding cross section and cores of a cable.
- c. Types of cables.
- d. Cable sizing.
 - Single Phase.
 - Three Phase.
- e. Types of cable trays.
- f. Cable tray sizing.

4. Methods of Electrical wiring.

- a. On/Off one way single light control.
- b. On/Off one way multiple light control.
- c. On/Off with fan regulator control.
- d. On/Off two way light control.
- e. Key tag wiring.

5. Circuit breaker Selection.

- a. Over load protection devices.
 - Miniature Circuit breaker.
 - Moulded case circuit breaker.
 - Air Circuit breaker.
 - Vacuum circuit breaker.
 - Sulphur hexafluoride breaker.
 - Oil circuit breaker.
- b. Shock protection Devices.
 - Earth leak circuit breaker.
 - Residual current circuit breaker.

c. Isolators.

6. Load calculations.

- a. Understanding Lighting loads.
- b. Understanding Power loads.
- c. Connected loads.
- d. Maximum demand.
- e. Demand factor.

7. Transformer, Diesel generator selection.

- a. Working of transformers.
- b. Types of transformers.
- c. De-rating factors.
- d. Diesel generator types.
- e. Auto mains failure.

8. UPS and Battery Sizing.

- a. Online UPS.
- b. Offline UPS.
- c. DE rating factors.
- d. UPS Sizing.
- e. Efficiency and backup time.
- f. Battery AH Capacity.

9. Distribution Board design.

- a. Single Phase DB.
- b. Three Phase DB.
- c. Load distribution for three phase DB.
- d. Bus bar sizing.
- e. Circuit breaker selection.

10. Schematic preparation.

- a. Main switch board design.
- b. Switch board design.
- c. Sub switch board design.
- d. Current transformer selection.

11. Earthing design.

- a. Types of earthing rods.
- b. Soil resistivity Understanding impedance.
- c. Short circuit current.
- d. Shortcircuit Power.
- e. Minimum Number of earth rods.

12. Capacitor Bank selection.

- a. Power triangle.
- b. Capacitance.
- c. Calculating Reactive power.

13. Lightning arrestor.

- a. Understanding Building design.
- b. Lightning stock flushing density.
- c. Minimum number of down conductors.

14. Electrical Drafting.

15. BOQ generation.

16. Design softwares - Autocad & Revit.



Path to success...



Vedanth MEP Training Institute
#116/3, 1st floor, Above Union Bank of India,
11th cross, Malleswaram ,Bangalore, 560 003.
Ph.:+91-9379592999, 6363652280
www.vedanthmep.com
info@vedanthmep.com