

MODULE 1- FUNDAMENTALS

Present scenario in the field of HVAC, Common terms and definitions used in HVAC, Rules, Regulations and standards to follow, Thermal principles involved, Fluid mechanics and HVAC, Psychrometry and process, Refrigeration and air conditioning cycles, Refrigerants and properties, Air conditioners types and applications, Parts and components of air conditioners, Multi stage systems, Ducts and associated components, Understanding building structure, Planning and development, Load calculation, HVAC designing.

MODULE 2- WORK ALLOCATION

Tender and quotation, Familiarising with manufactures GA drawings and O&M manuals, Tender drawing preparation, Professional Load calculation, Estimation and costing, Shop drawing preparation, TDS preparation, Rate analysis, Variation report, Final submission of works, hand over documentation, general documentation.

MODULE 3- DESIGNING PRACTICES

ASHRAE, ISHRAE, RHEVA, SMACNA, DW 144, ASME CODES AND COMPLIANCE, IAQ practices, Air distribution and air flow patterns, Air locks, pressure gradients, and ACH rates, Design of residential HVAC services, Design and operation of commercial HVAC services, Design and operation of data centres, Design and operation of health care facilities, Design and operation of tall, mega tall, super tall buildings, Laboratory design, Clean room design.

MODULE 4- COMPONENT SIZING AND OPTIMISATION

Coil design, Humidity control, Optimising indoor environments, Noise and vibration control system design, Insulations, Filters and controllers, Fans and blowers, Static pressure calculation, CAV and VAV systems, temperature and flow controls.

MODULE 5- HEAVY EQUIPMENTS

VRF/ VRV Systems, Air loop, Energy management, AHU and FCU services, AHU room designing, Chiller services design, Pumping and piping design, Piping network design and development, Cooling towers, Stair well pressurisation, Cold storage design, Chilled beam systems, District cooling systems, Plant room layouts, Electrical fundamentals, Controls and BMS.

PROJECT SUPPORT FOR HVAC LOW SIDE AND HIGH SIDE DESIGNING WORKS

MODULE 7 - FIRE SYSTEM BASICS

- INTRODUCTION TO FIRE FIGHTING.
- CLASSIFICATION OF FIRE (DESCRIPTION)
- FIRE EXTINGUISHER TYPES- USING PROCEDURE and GENERAL MAINTENANCE
- FIRE PROTECTION SYSTEMS
 1. ACTIVE
 2. PASSIVE
- REFUGE AREAS – RULES & REGULATIONS
- STAIR WELL PRESSURIZATION SYSTEM
- FIRE SUPPRESSION & DETECTION SYSTEMS
- SPRINKLERS – TYPE, SELECTION & DESIGNING
- DETECTORS – TYPE, SELECTION & DETECTION (SMOKE, HEAT, BEAM & FLAME DETECTORS)
- FIRE HOSE CABINET & FIRE HYDRANT SELECTION
- PIPE SELECTION & SIZING
- CONCEPT OF WET RISER & DRY RISER
- BASIC LAY OUT FOR DOWNCOMER & RAISER



MODULE 9- DESIGN OF FIRE SYSTEMS

- DESIGN OF OVERHEAD & UNDER GROUND FIRE TANK SIZING
- FIRE PUMPS (MAIN PUMP, JOCKEY PUMP & DIESEL PUMP)
- CLASSIFICATION, TYPES & SELECTION.
- DESIGN OF FIRE PROTECTION SCHEMATIC LAYOUTS
- FM 200 SYSTEM DESIGN (WATER LESS FIRE PROTECTION SYSTEMS)
- FIRE ALARM SYSTEM DESIGNING
- NFPA, NBA & FSAI CODE FOR FIRE FIGHTING SYSTEM DESIGNING
- FIRE FIGHTING HYDRAULIC CALCULATION FOR HIGH RISE BUILDINGS

