



### I. HVAC drafting : Introduction

- Introduction and Fundamentals of Air Conditioning.
- Modes of Heat Transfer
- Basic Components of Air-Conditioning and Refrigeration machines
- Refrigeration cycle - Line Diagrams
- Basic Refrigeration Cycle
- Chill water cycle
- Air cooled Chillers
- Water cooled Chillers
- Types of Air conditioning
- 1)Window A/ C
- 2)Spilt A/ C
- 3)Package A/ C
- 4)Central A/ C
- Categories of Air Conditioning -All air system ,All water system ,Air water system
- Study of psychometric charts Direct Refrigerant system

### II. HVAC Drafting : Detailing

- Survey of Building
- Materials used in the Building Finding Temperature difference and U Factor For Wall, Glass, Roof, Partition
- Load Calculations. Filling of E-20 Forms as per ASHRAE Standards for finding TR
- ADP &CFM calculation
- Insulation Of DUCT, Balancing of Duct, Leakage Test
- Static Pressure calculation for selection of motor & Fan
- Pipe size. Calculation (chill water pipe
- Fittings used in piping.
- Air Distribution system
- Fire Fighting Equipment (Awareness).

### III. HVAC Drafting : working Drawings

- Duct-Definition and types
- Materials of Duct and its specification (Gauge)



- Duct design consideration for Duct sizing as per Aspect Ratio
- Duct size method Equal Friction method Velocity reduction method. Static regain method
- Finding Duct size using Ductalator & Duct sizer software
- Calculation of No of sheets
- Symbols as per DW144 international standards
- Preparation of single line diagram (SLD) in drawing sheet
- Layouts (Double line)
- Sectional Drawing of DUCTS & its supports.
- Wall openings drawings wherever duct is passing through walls
- Sectional drawing of pipe & its supports

#### IV. HVAC drafting Software's

- XL Sheet for load calculation
- Revit MEP.

#### V. Live Projects for HVAC drafting (2 Nos)

- Shopping Mall – HVAC drafting
- Residential – HVAC drafting
- Hotel – HVAC drafting
- Office – HVAC drafting