

**M – MECHANICAL (HVAC)**  
**HEATING VENTILATION AND AIR CONDITION COURSE INDEX**

**DESIGN ENGINEERING & DRAFTING**

**INTRODUCTION & BASICS OF HVAC**

Basic Fundamentals

Modes of heat transfer

Standards & codes used In HVAC-R System

**METHOD OF WORKING PRINCIPLE OF REFRIGERATION CYCLE**

Basic components of Air conditioning

Refrigeration System

Study on Refrigerants & refrigeration Cycle

Type of Refrigerant

Types of Refrigerant cycle

**PSYCHOMETRICS**

Study of Psychometrics

**DESIGNING AND CALCULATION OF HEAT LOADS,**

Dehumidified air and heat load calculations

Designing on material basis

**TYPES OF AIR CONDITIONING SYSTEM;**

Selection and installation of Machines

**AIR DISTRIBUTION SYSTEM**

Air Distribution System

Elements contributing in Air Distribution System

Fan selection, applications Laws of Fans

Types of Air Terminal Devices

Types of AHU's, FCU, FAHU's and their installation

Types of material used for air distribution system

Classification of Ducts

Designing & Installation of Ducts

Methods of Duct designing

Duct Fittings

**DESIGNING OF CHILLED WATER SYSTEM,**

Types of chilled water system

Designing and installation of chillers

Components of chilled water system

Designing and installation of Colling tower

Chilled water Piping & Pipe Sizing

Pumps & Pump head calculations

Selection & installation of pumps & valves

**DESIGNING OF EXHAUST & VENTILATION SYSTEM;**

Types of ventilation system

Types of exhaust system

**DESIGNING OF STAIRCASE PRESSURIZATION SYSTEM**

**DESIGNING PROCESS FOR THE CALCULATION OF AIR FLOW QUANTITY**

**HVAC DRAFTING,**

Symbols & Legends of HVAC System

Drafting Standards of HVAC System

Representation of Design drawing

Preparation of Single line Schematic & isometric Drawing of Air condition Ducting & ventilation Ducting

Typical details of equipment's used in projects

**ESTIMATION & COSTING OF PROJECTS,**

Estimation & tendering requirements;

Bill of Quantities (BOQ) from shop drawing;

Preparation of O&M manuals;

Preparation of Testing & Commissioning Reports;

Preparation of inquiries, & preparation of Final Billings;

Preparation of approvals from consultants and authorities;

**PROJECT MANAGEMENT,**

Estimation and tendering of projects;

Procurement Process;

Preparation of material submittals;

Preparation of bill of quantity's;

Preparation of O&M manuals;

Preparation of testing and commissioning reports;

Preparation of installation approvals from consultants and authorities;

**PROJECT WORKS,**

1 minor and 1 major project;