HVAC System

Course Introduction:

Already air conditioning is considered recession-proof by most business analysts, the heating and air conditioning industry is enjoying tremendous growth across the country. In dense urban areas, property owners need experienced HVAC technicians to help old buildings meet strict new environmental regulations. Meanwhile, as business and residential development extend further into the suburbs, HVAC contractors are in short supply**.**

Course Objectives:

After completing this course participants will be able to:

- Make A Complete Design For HVAC Systems
- understand of the function of each component of the HVAC system
- Conduct troubleshooting
- Conduct the Maintenance in the correct system
- Determine the Right Construction Type For Each Part in the System
- Make a complete supervision for the Hvac Systems Design & Construction at site

Who should attend?

- Mechanical and electrical engineers (working at Contractors Companies Or Consultancy Offices or owners Companies)
- Air conditioning engineers
- AC supervisors and operators
- Maintenance engineers and supervisors
- Every person whom job is related to air conditioning

Course Duration:

5 days, 7hours/day (from 9:00am to 4:00 pm).

Course Outline:

- 1-Load Estimation : To Make Complete Calculation for the Loads Manual & With HAP
- 2-Cooling Cycle & its Components & the Different Type For Each Component
- 3-the Different Types OF HVAC Systems & How to Know Which Type is suitable For Which Application .
- 4- Air Outlets : To Determine the Different Types of Air Outlets & how To Make Correct Selection & How to Make the Air Outlets Distribution & Design
- 5-Duct Design : Make A Complete Design For the Duct System with all its Components & Accessories
- 6-Duct Construction: To Determine the Different Accessories to be installed on the Duct and SMACNA Code Requirements for the Duct Installation & how to make the Duct Insulation and how to calculate the Duct Weight & How To calculate the Insulation Area.
- 7-Air Ventilation Networks Design: in this Section of the Course We Will Make Complete Design For the Ventilation Networks with its Different Types For the Car Park & the Kitchens & Restaurants applying ASHRAE Code Requirements for Ventilation .
- 8-Chilled Water System Design : Making a Complete Design For the Chilled Water System Including the Following Points :
- a- Chilled Water Piping Design : to determine the Required Size For Each Section in the Chilled Water Network
- b-Pump Design : Make A Complete Design For the Pump & Calculate (Required Flow & Discharge for the CHW Circulation Pump)

- c – Balancing System & Control System to control the CHW Flow For Each A/C Unit & Determine the Different Balancing Systems and the Advantages & Disadvantages For Each System .
- d- Studying Each Component in the Chilled Water System & Determining the required Hock Up for Each Component (FCU , AHU,Chiller,Cooling Tower, ……..)
- e- Making Design & Selection For the Cooling Tower & the Chiller .

- 8-Pumps Design : Making Design & Selection For the Different types of Pumps
- 9-Fans Design : Determining the Different Types of Fans And Knowing Which Type is Used In Different HVAC Applications And Making Selection And Fans Static Pressure Calculation
- 10- BMS: Making Full Design For the Building Management System And Making the Drawings & Tables & Quantity Survey.