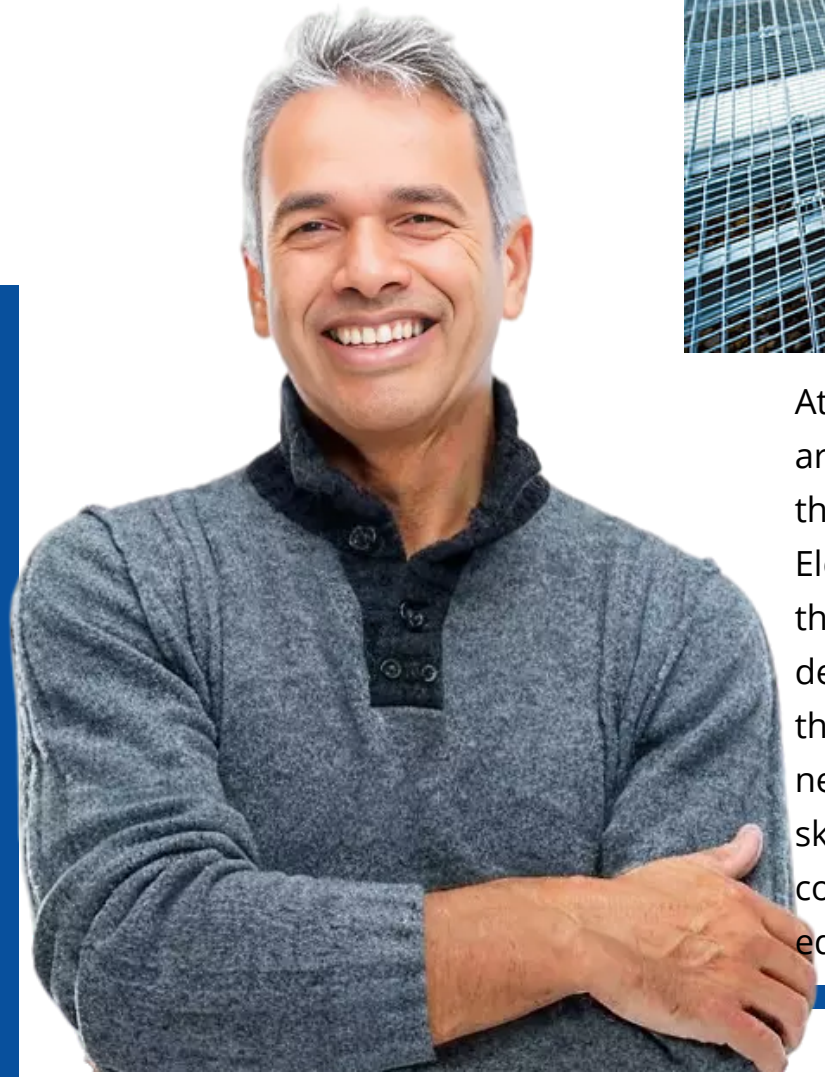
ENGINEERS' CERTIFICATION PROGRAM

Engineering Skills



At Electrical Learning Portal (ELP), we are dedicated to shaping the future of the electrical and MEP (Mechanical, Electrical, and Plumbing) industries through professional training and development. Our mission is to bridge the gap between the ever-evolving needs of employers and the dynamic skill set of engineers by providing comprehensive, industry-relevant education and training.

Degree + Skills = Career Growth

CONTACT US

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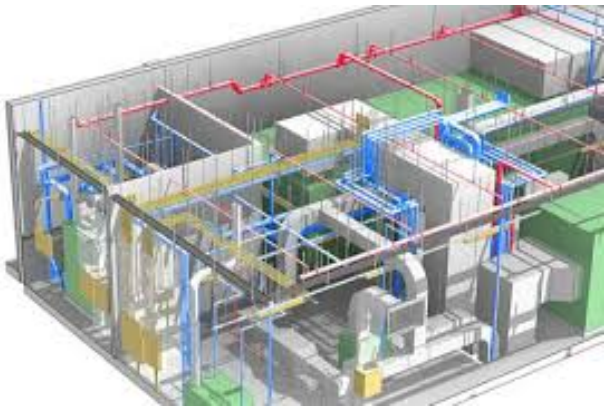
HAVC SYSTEM DESIGNING | LIVE

Welcome to the course on MEP – HVAC. In this course we will learn about the design and engineering of HVAC Systems, focusing on the HVAC System application. We will cover the Heat Load Calculations, ESP Calculations, selection of fans and pumps.

You will learn about the Chiller system incorporating HVAC Systems, the Cooling Tower selection, and the chilled water pipe selection. We will also cover the selection of the VRF System. The toilet, Kitchen, and Car Parking Ventilations are also covered.

In this course, you will also gain an understanding of the relevant codes and standards, ensuring that you can design HVAC that meets safety and regulatory requirements. You will also get hands-on experience using AutoCAD, which are powerful tool used in the MEP engineering industry.



TOPICS

Part 01 Basics of HVAC

- ***Introduction***

Introduction to HVAC System

Types of Heat Processes

- ***Refrigeration Cycle***

o Refrigerants

o Types of Refrigeration Cycle

o VCR Cycle & VAR Cycle

- ***Psychometric – Properties of Air***

o Study of Psychometrics

o Properties of Air

o Psychometric Chart Study

- ***Classification of AC System***

o Classification of different types of AC Systems

o AHU, CSU, DX System

o Chiller – Water & Air Cooled Chillers

o VRF

o Cassette Units, Split Unit & Window Unit AC

o Precision Air Conditioners

Part 02 Heat Load Calculations

o Understanding the Importance of Heat Load Calculation

o U – Values

o ΔT – Values

o Q – Values

o Manual Heat Load Calculations (E20 Method)

o HAP Software Calculations

Part 03 ESP Calculations & Ventilation

o Introduction to Duct System

o Types of Duct Systems

o Duct Sizing Methods (Equal Friction & Velocity Reduction Method) usingnDuct Sizer

o Understanding the ESP basics

o ESP Calculations

o Types of Fans

o Toilet Ventilation

o Kitchen Ventilation

o Car Parking Ventilation

Part 04 Pump Head Calculation

o Introduction to Piping

o Pump Head Calculation

o Understanding HVAC Chiller Schematic Drawing (Chiller & VRF)

o Pipe Sizing using Pipe Sizer Software

Part 05 Chiller & Cooling Tower Selection

o Introduction to Chiller

o Introduction to Cooling Tower

o Cooling tower Calculations & Selection

o Chiller Calculations & Selection

o Expansion Tank Sizing

Part 06 VRF Designing System

o Introduction to VRF
o Copper Pipe Sizing
o VRF Layout and Schematics

Part 07 HVAC BOQ & Documentation

o Understanding Low & High Side HVAC BOQ
o Quantity Take off for Ducting, Insulation
o Quantity Take off for Air Terminals, Pipes & High Side Chiller & VRF
o Design Basis Report Preparation
o Technical Data Sheets for HVAC Major Equipment

Part 08 AutoCAD

o AutoCAD Commands
o Basic CAD Commands used in HVAC MEP

Tools

o All Classes are Live via Google Meet or Zoom
o MS PowerPoint slides
o Basic Layouts by AutoCAD
o HAP Software for Heat Load Calculations
o Mc Quay Duct Sizer & Pipe Sizer Softwares
o ESP & Pump Head Calculation using Microsoft Excel
o PDF notes

Benefits of the program

1. *Join the professional training*
2. *Understand the real world*
3. *Be a part of the Professional Engineers' Community*
4. ***Program Completion Certificates***
5. ***Join our engineers' WhatsApp Groups***

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