



**ENTRI**

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# MEP

**DESIGN COURSE**



## **An Upskilling Course for a High-Paying Career in India & Abroad**

Entri App is a vernacular learning platform that aims at helping people land their dream job by empowering them with the right skill set & expert guidance at an affordable cost. Being India's one of the fastest-growing e-learning platforms attracting over 1 crore students, Entri offers a wide range of courses to help students prepare for government exams and upskill themselves for various career opportunities.

The MEP Design Course, which is One of Entri's upskilling programs, is specifically designed for engineers who aspire to excel in their careers. It is really suitable for those who aspire for a high paying job in India and abroad.

The 'MEP Design Course' goes beyond traditional academic learning by providing comprehensive training and guidance. It equips students with the necessary skills and knowledge to thrive in the dynamic field of MEP design. This valuable opportunity allows students to apply their newly acquired skills in real-world scenarios, enhancing their understanding and employability.



# WHAT IS AN MEP DESIGN COURSE?

MEP design, short for Mechanical, Electrical, and Plumbing design, is an essential component of building engineering and construction. It encompasses the planning, design, and integration of mechanical, electrical, and plumbing systems within a building or infrastructure.

**Mechanical:** This includes systems for heating, ventilation, and air conditioning (HVAC) to ensure proper climate control and air quality.

**Electrical:** It involves the design of electrical systems, including lighting, power distribution, and security systems, to meet the building's electrical needs efficiently and safely.

**Plumbing:** This covers the design of water supply, drainage, and sewage systems, as well as fire protection systems.

MEP design is crucial for ensuring a building's functionality, safety, and sustainability. It requires expertise in engineering principles and regulations to create efficient and reliable systems that meet the specific needs of the structure and its occupants.

# CAREER OPTIONS AFTER THE COURSE

- ✓ MEP Engineer/Designer
- ✓ HVAC Engineer
- ✓ Electrical Engineer
- ✓ MEP Project Manager
- ✓ MEP Consultant

## MEP GOLD PLAN

- ✓ 40 Sessions of recorded classes
- ✓ Site visit in the Middle East / India
- ✓ Live projects from the Middle East
- ✓ 3 Live classes in a week
- ✓ 6-month mentorship
- ✓ Personal mentorship
- ✓ WhatsApp group for doubt clearance
- ✓ Placement assistance

- ✓ Industry Interactions
- ✓ HR Interview preparation sessions
- ✓ Course completion certificate

# COURSE CURRICULUM

## ELECTRICAL

### 1. FUNDAMENTALS OF ELECTRICAL BUILDING SERVICES

- Electricity - Definition Units & Symbols
- Basics & Importance of Electricity
- Generation, Transmission & Distribution System

### 2. WIRING AND CABLE MANAGEMENT SYSTEMS

- Rules & Regulations.
- Types & Selection Of wiring systems
- Applications and Selection of switches & sockets
- Applications and Selection of wires and cables
- Lighting, Power circuit wiring diagrams
- Conduit Layout Design
- Load schedule & Load balancing
- Selection of MCB Distribution Boards
- Standard Heights of Mounting Accessories

### **3. LIGHTING MANAGEMENT SYSTEM**

- Lighting Schemes.
- Lighting Load Estimation and Designing of Lighting Panels.
- Types and Application of Luminaries.
- Lighting Designing of Auditoriums and Theaters
- Lighting Designing for Interior Decoration and Landscape.
- Emergency Lighting System.

### **4. POWER DISTRIBUTION SYSTEM**

- Types & selection of Circuit Breakers.
- Importance & application of VCB, ACB, MCCB & MCB
- Isolators and SDF (Switch Disconnecting Fuse)
- Selection of AMF (Automatic Main Failure) & APFC (Automatic Power factor Correction) Panel
- Underground Cable Type & Selection.
- LT Panel Board Design.
- Coordination with HVAC, Plumbing, Firefighting, Mechanical systems like Chillers, AHU, FCU, water and Drainage pumps, Fire Fighting Pumps etc.
- Switchgears-Types and Selection.
- UPS & Inverters.

### **5. EARTHING & LIGHTNING PROTECTION SYSTEM**

- Earthing Systems (Types Method and Installation).
- Lightning Protection Systems.

## **6. TRANSFORMERS & GENERATORS (HT)**

- Types and Selections.
- Installation - Rules and Regulations.
- Parallel Operation of Transformers and Generators.

## **7. ELECTRICAL DESIGN CALCULATIONS**

- Calculating the Total Power Requirements
- Circuit Breaker Selection & Design Calculations..
- RCBO/ELCB Selection & Design Calculations..
- Branch & Main Feeder cable Sizing, Selection & Calculation.
- Determining Cable Trays and Trenches.
- Busbar Selection and Design.
- Earthing Cable Selection and Design.
- Total connected load & Maximum Demand Calculation based on Diversity Factor.
- Load distribution Schedule & load Balancing calculations.
- Transformer selection & Design calculations.
- Generator selection & Design calculations.
- Capacitor bank selection.
- Voltage Drop calculations.
- Fault level calculations.
- Preparation of Schematic diagram (One Line Diagram) - Residential, High rise, Commercial and Industrial buildings.



# PLUMBING

## 1. FUNDAMENTALS OF PLUMBING SYSTEM

## 2. INTRODUCTION - DEFINITIONS - CONCEPTS

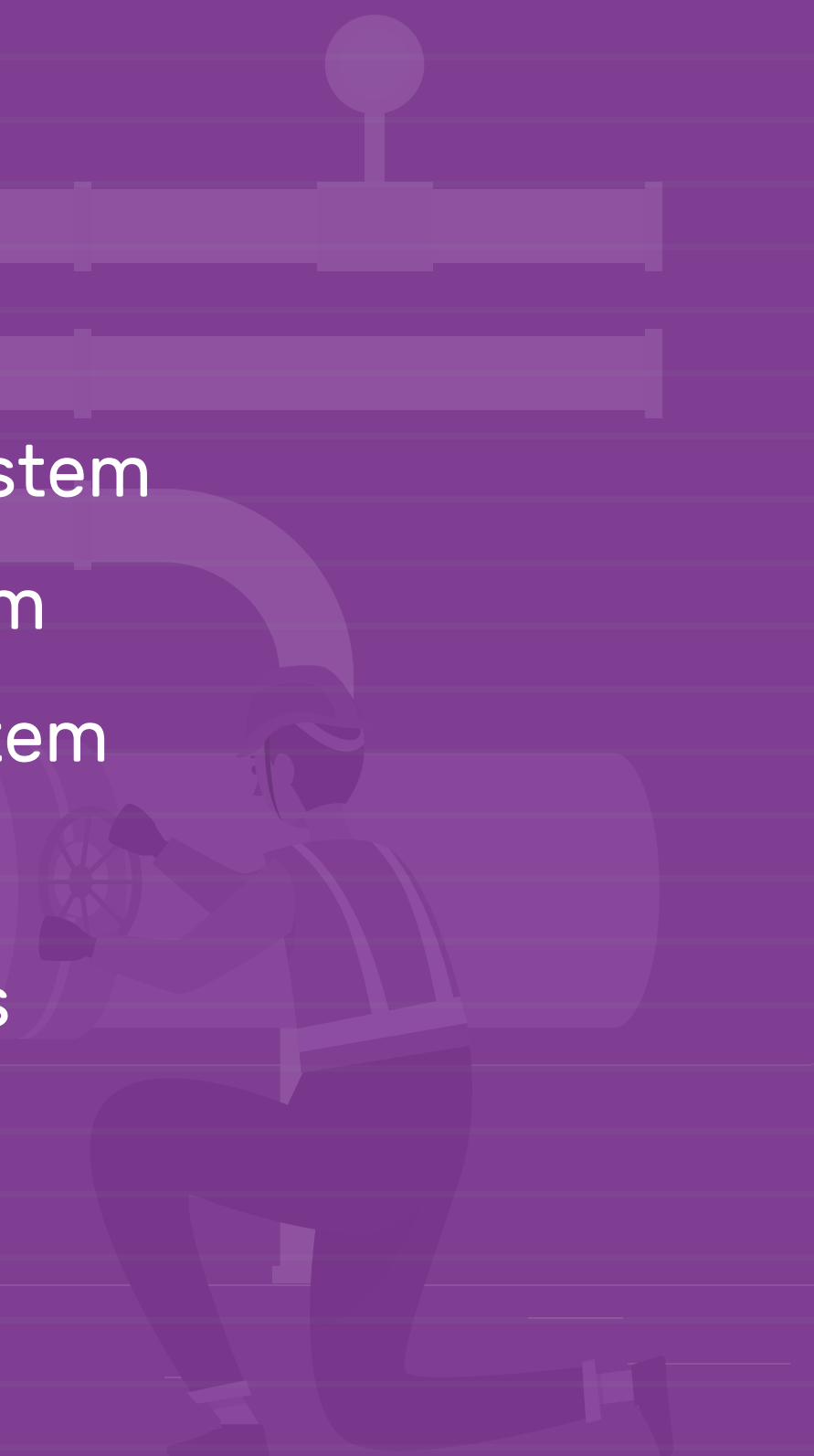
## 3. INTRODUCTION TO INTERNATIONAL STANDARD

## 4. WATER SUPPLY SYSTEM

- Different Types Of Plumbing Materials In Water Supply System
- Cold Water Supply Water Flow System
- Hot Water Supply Water Flow System
- Water Supply Schematic Layout & Plan Layout
- International Plumbing Code And Local Authority Requirements
- Sizing Of Water Supply Piping Network
- Water Demand Calculations
- Water Storage & Plumbing Calculations

## 5. DRAINAGE AND STORMWATER

- Fixtures, Faucets & Fixture Fittings
- Design Of Sanitary Drainage & Venting System
- Requirements Of Sanitary Drainage System
- External & Internal Sanitary Drainage System
- Single And Two Stack System
- Sanitary Drainage Pipe Sizing Calculations
- Design Of Storm Water Drainage System
- Manhole & Soak Pit Design





- Sanitary Drainage Schematic, Plan & Detailed Layout

## **6. DESIGN OF WATER TREATMENT PLANTS**

## **7. DESIGN OF SEWAGE TREATMENT PLANTS**

## **8. DESIGN OF SWIMMING POOLS & FOUNTAINS**

## **9. DESIGN OF IRRIGATION PIPING SYSTEM**

## **10. DESIGN OF DOMESTIC GAS SUPPLY SYSTEM**

# **HVAC**

## **1. HVAC INTRODUCTION**

- Application of HVAC Systems
- Human Comfort Condition

## **2. BASIC COMPONENTS OF AIR-CONDITIONING AND**

- Refrigeration Machines
- Basic Refrigeration System or Vapor Compression Cycle
- Refrigeration Cycle & its functions
- Function & Types of Compressors
- Function & Types of Condensers
- Function & Types of Expansion Valves
- Function & Types of Evaporators
- Properties of Refrigerants

## **3. TYPES OF DX AIR CONDITIONING & SELECTION**

- Window A/C Systems

- Split A/C Systems
- Package A/C Systems
- Multi split AC concept
- Variable Refrigerant Volume (VRV)/ Variable Refrigerant Flow (VRF) Systems

#### **4. CHILLED WATER AIR CONDITIONING SYSTEM AND TYPES**

- Concept of Chilled Water System
- Chilled water Piping Configurations
- GPM Calculations
- Pipe sizing for Chilled Water System
- Valves Used in Chilled Water System
- Pipe Routing & Levels
- Pump Head Calculation
- Selection of Pumps
- Technical Connection Details - FCU, AHU, Chillers, Pumps etc

#### **5. AIR DISTRIBUTION SYSTEM STATIC PRESSURE CALCULATION**

- Duct-Definition & Classification.
- Duct Materials and Selection.
- Air Distribution Design - Ducting Design.
- International Ducting standards- Smacna , DW144, ASHRAE
- Aspect Ratio , Duct Routing & Levels

- Duct sizing methods –Mc Quay Duct Sizer
- Air outlets- Diffusers and Grilles, selection.
- Duct Accessories (Sound Attenuators, VAVs, VCD, FD, SD etc.)
- External Static Pressure Calculations

## **6. VENTILATION**

- Design Ventilation Concept and Types of Ventilation
- Introduction ASHRAE 62.1
- Breathing Zone Fresh Air Design and Calculation.
- Exhaust System Types Design and Calculation
- Parking Exhaust System Types & Procedures.
- Domestic & Industrial Kitchen Ventilation.

## **7. Heat Load Calculations**

- Sources of heat and Parameters
- Survey of Building
- Finding 'U' Factor for Walls, Roof, Glass etc
- Tonnage (TR) & Air Flow (L/S) for Project
- Heat Load Estimate - Manually Basics

## **8. HAP SOFTWARE**

- Weather
- Spaces
- Systems
- Plants

## **9. AIR CONDITION EQUIPMENT SELECTIONS**

- Selection based on Heat Load Results
- Selection as per Project Specifications, Application and Popular Brand
- Placing Location of Equipment Equipment Detailing as per Catalogs
- Machines: AHU, FCU, Primary Pumps, Secondary Pumps, Chillers, Exhaust Fans, Centrifugal Fans, Grills & Diffusers, Kitchen Exhaust Hood, Parking Exhaust Fans etc
- 10. International drawings Representation & Live project
- Introduction to International Drawings
- Various types of international drawings and representations.
- Live project
- Detailed Latest Technology Developments in HVAC System

## **AUTOCAD**

### **1. BASIC AUTOCAD**

- Introduction About CAD
- How to Open, Close Save and Save As
- Toolbar and Command line

### **2. DETAILS ABOUT DRAFTINGS**

- Units
- Draw and Modify Commands
- Dimension Style, Dimension & Layers



- File Cleaning, Title Block Settings

### **3. PROJECT DISCUSSION**

- How to Submit Drawings
- IFC Drawings, Shop Drawings, Red Mark Up Drawings & As Built Drawings
- Coordination Drawings
- Revisions, Submission and Approvals



# EXPERTS TO GUIDE YOU

Get guidance from qualified professionals and industry experts with 10+ years of experience in the field



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## BABU DEVASSYKUTTY

(UAE & India)

20+ years of experience delivering projects from across UAE, Qatar, Saudi Arabia, USA & India.

Past Employers: Eastern International LLC - UAE, AMANA - UAE.



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## RAKESH M

(UAE & India)

MEP professional with 15+ years of experience delivering projects from across UAE, Egypt, Qatar & Saudi Arabia, USA & India.

Past Employers: Etisalat - UAE, Meydan - UAE.



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## SAIMON KS

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MEP professional with 15+ years of experience delivering projects from across UAE, Qatar & Saudi Arabia & India.

Past Employers: Trojan - UAE,

Altorath International Consultancy - UAE.

THANK YOU

