KG MECH
Electro Mechanical Pvt. Ltd.

HVAC

DESIGN & DRAFTING TRAINING

Empowering Engineers for Real-World MEP Projects

Ready to Power Up Your Career?

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SANTOSH NAGAR | MASAB TANK

KG MECH
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KG-MECH Pvt. Ltd. **with inception has been diversified its business in different service sectors such as Contracting, Real time training, Technical Services.**

"KG MECH was founded with an idea of bridging the gap between the talented, yet unpolished resources and the employers for better hiring and achievement of the goals."

KG-MECH offers leadership and training programs for the advancement of Engineer's technical excellence, promotes to incorporate code of ethics in their way of life and place of work. The high level of expertise they deliver makes sure that the student learns the concept and performs it with high caliber.

"80% Practical Training & 20% Theoretical Training"

PROGRAMME DESCRIPTION

HVAC Design & Drafting for the Construction Industry

At KG MECH, we term Real Time Training as a methodology and practice instituted upon the trainees to improve their skills and match the job requirements. Our trainees are been made to work on the Gulf-oriented projects rigorously with expert supervision to build a bridge between the theoretical knowledge and the practical job work.

This program introduces the full range of HVAC Systems topics from the definitions, Basic Calculations-manual & software, Codes & Standards, Drafting and Installation Procedures. Each topic is presented so as to demonstrate the "real world" impact of design decisions on resulting system performance. (**See the "Course Outline" section for details of topics.**)

This Training Programme gives comprehensive knowledge of HVAC Design, Drafting & Installation of Building Service. The Programme focuses on the real time work related concepts, issues, which is enhanced by the inputs of the instructor's practical experience.

WHO SHOULD ATTEND

Mechanical Engineers/ Designers/ Draftsman's who are responsible for design, drafting, installation, estimation and maintenance of HVAC system for Building & Facilities.

MEP Engineers/ Managers including Electrical, Instrumentation Engineers who wish to understand/ supervise Electro-Mechanical Projects.

Mechanical Engineers at entry or senior level, who wish to streamline their existing knowledge to make a career in HVAC Engineering for Building System.

WHAT YOU WILL LEARN

Learn how HVAC systems "work," how to design, draft, install and maintain HVAC Systems.

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"Complete AUTO CAD Training"

MODULE 1 – HVAC INTRODUCTION

Introduction to HVAC

- HVAC Introduction
- Human Comfort Condition
- Application of HVAC Systems

Basic Components

- Basic Refrigeration Cycle & its function
- Refrigeration Cycle
- Types of Compressors
- Types of Condensers
- Types of Expansion Valves
- Types of Evaporators
- Properties of Refrigerants

Air-Conditioning Equipment's

- Classification
- Window A/C Systems
- Split A/C Systems
- Package A/C Systems
- VRF/VRV Systems
- Central Air-Conditioning/Chill Water System
- DX System

Categories of Air Conditioning

- All air system
- All water system
- Air - water system
- Direct Refrigerant system

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"Complete Shop Drawing Preparation along with BOQ"

Psychometric

- Psychometric Chart
- Properties of Air (DBT, WBT, RH, SH etc.)
- HVAC Processes
- Using Psychometric Chart

MODULE 2 – HVAC DESIGN

Heat Load Calculations

- Sources of Heat
- Building Survey
- Heat Load Formula
- Finding U value for Walls, Roof, Glass etc.
- Finding ΔT (Temperature Difference) value for Walls, Roof, and Glass etc.
- Ventilation Requirements
- Infiltration Concept
- Heat Load Estimate (HAP Software)
- Tonnage (TR) & Air Flow (L/S) for Project

Selection of Machines

- Selection based on Heat Load Results
- Selection as per Application
- Selection as per Project Specifications
- Placing Location of Equipment

Air Distribution System

- Duct – Definition & Classification
- Aspect Ratio
- Duct Sizing Methods
- Mc Quay Duct Sizer
- Duct Routing & Levels

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"Online & Class Room Training"

- Single Line Drawing
- Double Line Drawing as per SMACNA
- Selection of Diffusers & Grilles
- Duct Accessories (Sound Attenuators, VAVs, VD, FD, AD, FC etc.)
- Selection of Supports & Span
- Ducting Schematics
- Static Pressure Calculations
- Selection of FAN
- BOQ for Ducting System



Fresh Air System

- Concept of Fresh Air
- Mixed Air System – Fresh & Return
- 100% Fresh Air Handling System
- Heat Recovery Air Handling Unit
- Fresh Air Fan Selection

Chilled Water/ Hydronic System

- Concept of Chilled Water System
- Classification of Piping
- GPM Calculations
- Pipe Sizing of Chilled Water System
- Valves used in Chilled Water System
- Pipe Routing & Levels
- Pump Head Calculation
- Selection of Pumps
- Bill of Quantities




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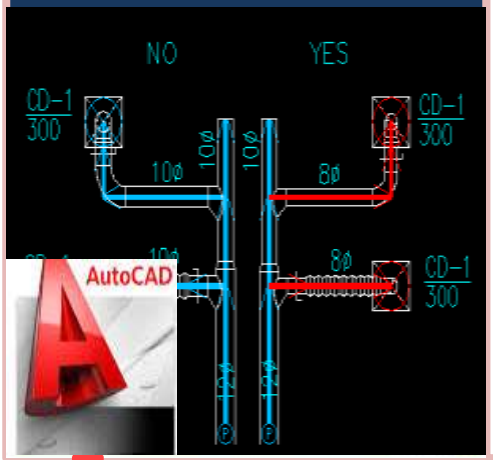

International Standards

- ASHRAE
- SMACNA
- ASME
- NFPA
- IAQ

MODULE 3 – EXHAUST AIR SYSTEM

Kitchen Exhaust System

- Kitchen Exhaust Concept
- Classification of Stoves
- Kitchen Hood Types and applications
- Kitchen Hood Calculation by the Software
- Kitchen Hood Calculation by Manual
- Makeup Air Calculation
- Makeup Air Fan Selection
- Kitchen Exhaust and Makeup Air Duct Routing and Designing

Parking Exhaust System

- Parking Exhaust Concept
- Parking Exhaust Types and Procedures
- Tube Axial Concepts and Design
- Central Exhaust Ducting Concepts and Design
- Parking Exhaust Fan Calculation

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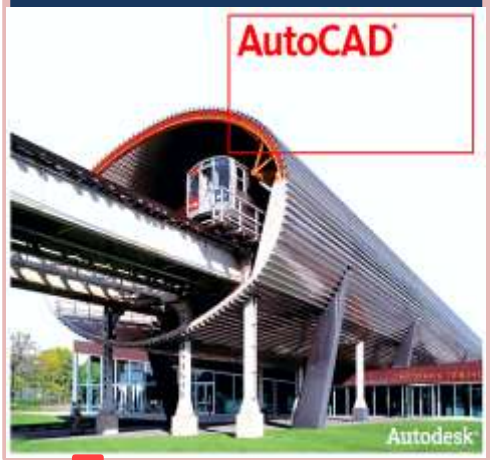

Staircase Pressurization System

- Staircase Pressurization System concept
- Staircase Pressurization System types and Procedure
- System Components
- Staircase Pressurization System Design
- Codes and Standards
- Staircase Pressurization System Calculation
- Duct routing and Designing for fresh air
- Fresh Air Fan Selection

MODULE 4 – HVAC SOFTWARE

HVAC Software

- HAP – Hourly Analysis Programme
- BETA Software – Air Outlets
- McQuay Duct Sizer
- McQuay Pipe Sizer
- Static Pressure Calculation
- Pump Head Calculation
- Kitchen Exhaust System
- Car Park Exhaust System
- Master Converter

MODULE 5 – HVAC DRAFTING AUTOCAD

- Introduction to AutoCAD
- Single Line Drawing
- Builders Work

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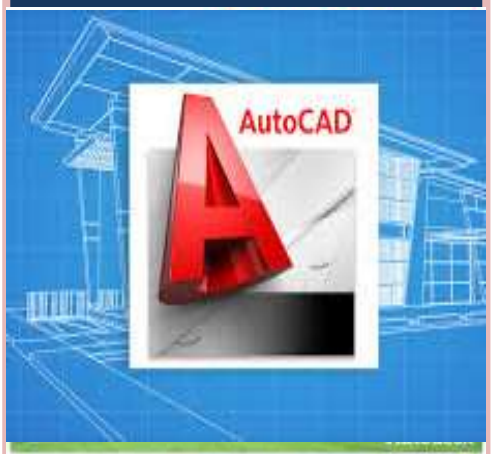

- Double Line Drawing
- Shop Drawing – SAD, RAD, FAD, EAD, KED, PED, CHSR.
- Chiller Detail Drawings
- FCU & AHU Detail Drawings
- Primary & Secondary Pump Detail Drawings
- As-Built Drawing
- Scale Setting & Plotting
- Sections & Schematic Drawing
- Co-Ordination Drawing
- Model Management
- Layout Management
- Equipment Schedules
- International Drawings

KG MECH
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Mr. Syed Abdul Gaffar
M.Tech - HVAC, Design Specialist
HRO – Education Director

"Highly Experienced Trainers with GULF Experience"

INSTRUCTOR PROFILES

Mr. Syed Abdul Gaffar, M.Tech – HVAC has over 12 years of experience in MEP systems including Design, Drafting, Installation & Maintenance of the MEP Systems with international Experience.

He has served to international projects of UAE, KSA, Qatar, USA & India, as Senior Mechanical Engineer & MEP Systems Manager. During his career, Mr. Syed Abdul Gaffar was involved in many prestigious projects like Residential, Commercial, Industrial & Schools Projects.

His Experience includes MEP Design for Building Services as per ASHRAE, SMACNA, NFPA, NEC, DEWA, ASME CODES.

Currently Mr. Syed Abdul Gaffar is a CEO, KG – MECH Electro-Mechanical LLC. He is also presiding the responsibilities as on Education Director, HRO (Human Rights Observers). He has successfully trained numerous Mechanical engineers from different nationalities for HVAC/MEP courses organized by KG – MECH.

Mr. Syed Abdul Gaffar is

- ❑ Education Director – HRO, Human Rights Observers, Hyderabad Cell.

Mr. Syed Abdul Gaffar is a member of

- ❑ NFPA – National Fire Protection Association
- ❑ ISHRAE – Indian Society of Heating Refrigeration & Air Conditioning Engineers
- ❑ IGBC – Indian Green Building Council
- ❑ IHRA – International Human Rights Association

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Contact Us

TRAININGS

SANTOSH NAGAR OFFICE:
Address: 17-1- 380/E/42/A,
1st Floor Opp. to Pillar No 63
Santosh Nagar, Hyderabad
Mob:- +91 97006 40034
+91 99890 61778

MASAB TANK OFFICE:
Address: 10-4/A/12/1,
1st Floor, Above AlHabeeb Trust,Opp. to NMDC, Masab Tank,Hyderabad
Mob:- +91 97009 10004,

We have Expert Faculties in this three Engineering Fields:

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Upto 08yrs Exp ELECTRICAL ENGINEERS

Upto 07yrs Exp CIVIL ENGINEERS