KG MECH
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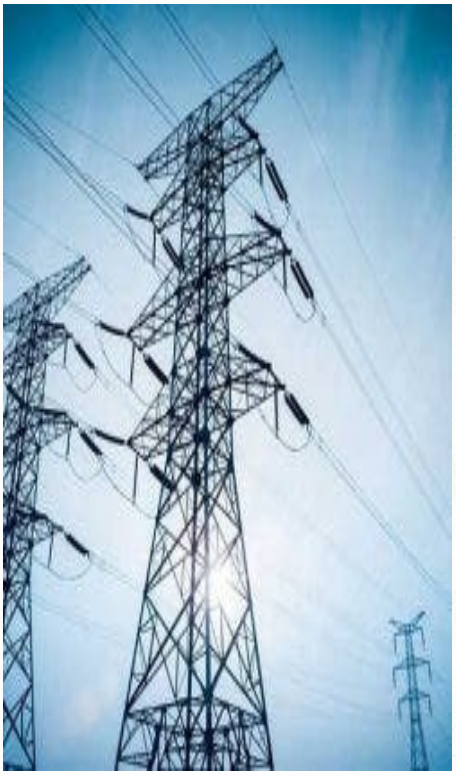
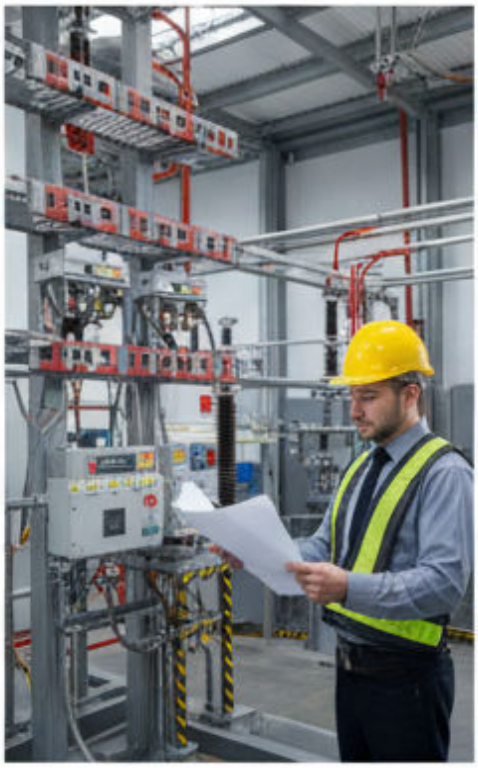
ELECTRICAL

DESIGN & DRAFTING TRAINING

Empowering Engineers for Real-World MEP Projects


Ready to Power Up Your Career?

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KG -MECH Pvt. Ltd. with its 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

ELECTRICAL 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 ELECTRICAL 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 ELECTRICAL 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

Electrical Engineers / Designers / Draftsmen who are responsible for design, drafting, estimation, and installation planning of Electrical Systems for Buildings and Facilities.

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

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

WHAT YOU WILL LEARN

Understand how ELECTRICAL systems work, and gain expertise in designing and drafting professional ELECTRICAL layouts.

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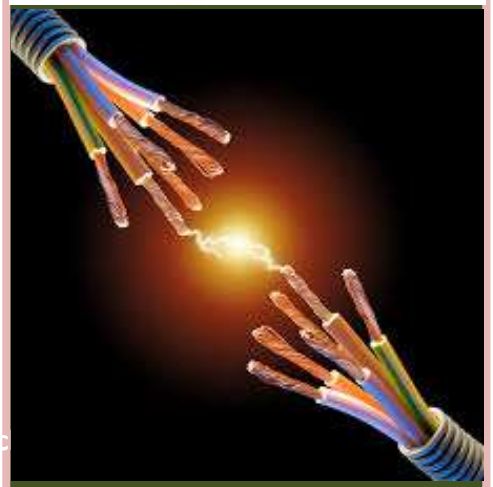
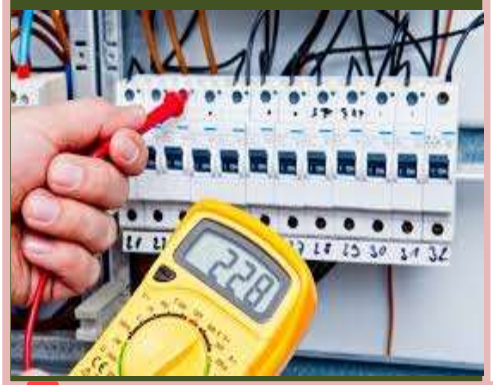


Master Electrical System Design with real-time knowledge of standards, design, drafting, and electrical drawing preparation

"Complete AUTO CAD Training"



MODULE 01 – ELECTRICAL BASICS

- Introduction to Electrical
- Electrical Basics
- Measuring Instruments
- Electricity-Generation, Transmission & Distribution
- Electrical Equipment's-Transformer, Motor, Generator, UPS etc.
- Codes & Standards – NBC, BS, NEC, DEWA.

MODULE 02 – ELECTRICAL ACESSORIES

- Switches-one way, 2 way, 3 way, etc
- Sockets or Receptacle
- Ring circuit
- Wiring connections in residential & commercial projects
- Panel wiring connections

MODULE 03 – LIGHTING SYSTEM

- Introduction
- Types of Light Fixtures
- LUX or Foot Candle measurement
- LUX Level as per Project
- Light Fixtures calculation as per Standards
- Standard method of lighting placement in project
- Preparation of Light fixture schedule
- Light Fixture Selection Software's - DIALUX & DIALUX EVO.

MODULE 04 – LOAD CALCULATION & DISTRIBUTION

- Light Fixtures load calculation
- Fan load calculation
- HVAC load calculation
- Plumbing & Fire Fighting load calculation

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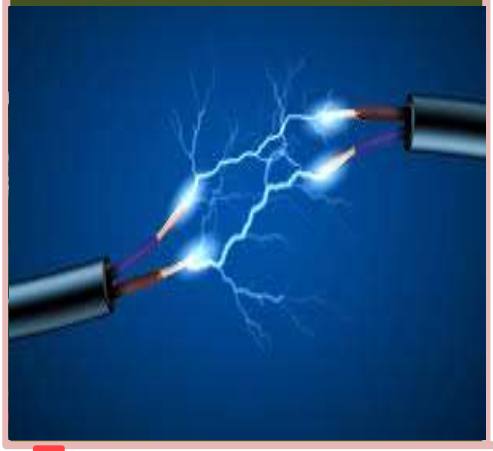
"Complete Shop Drawing Preparation along with BOQ"



- Lift load calculation as per project requirement
- Preparation of load schedule
- Maximum Demand Load & Total load calculation
- Diversity Factor & its Standards
- Load distribution of Lighting & power
- Load distribution schedule – HVAC, Fire Fighting, common Loads, MDB, SMDB & FDB
- Load distribution schedule of Emergency devices- DG & UPS.

MODULE 05 – CABLES SELECTION & INSTALLATION

- Cables- armoured & un armoured cables
- Cable Insulation
- Cable type & construction features
- Cable selection
- Cable Routing
- Current rating of cables
- Cable size calculation for motors
- Voltage drop Calculation of Cables
- Application of cable gland & types
- Cable schedule Preparation
- Cable resistance & impedance values
- Cable Lug & its Applications
- Calculation of short circuit withstand capacity of cables

- Installation of cables
- Conduits – types & application
- Conduit selection
- Installation method of conduits
- Cable trays-types, installation procedure, different sizes of cable trays

- Fittings & Accessories of Cable tray
- Cable tray sizing calculation
- Cable tray Routing

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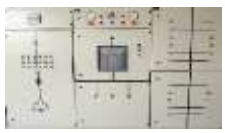
MODULE 06 – SWITCH GEAR & PROTECTION

- Introduction
- Types of Fault currents
- Importance of Breaker
- Types of circuit breakers – MCB, MCCB, ACB, VCB, SF6, ELCB or RCD

- Selection circuit breaker on Feeder current rating

- Short circuit calculation
- Installation standards of Circuit Breakers

- Disconnect switches & Isolators
- Isolator Size calculation
- Switch gear Application & types



- LT & HT panels
- ATS & COS panel
- MDB, SMDB, FDB

- MCC (Motor Control Centre) panel

- Bus bar & its function
- Bus bar sizing calculation
- Bus bar risers
- Bus bar wiring connection & its installation

MODULE 07 – ELECTTRICAL EQUIPMENTS & SELECTION

- Transformer & its Application
- Types of Transformers
- Transformer sizing calculation based on project load

- Installation standards of Transformer
- Transformer placement in the project

- Generator & its Application
- Types of Generators

- Generator sizing calculation
- Wiring connections of Generator

- UPS & its application
- Types of UPS

- Wiring connections of UPS

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- Battery Sizing calculation
- Capacitor bank function
- Capacitor bank sizing calculation

MODULE 08 – EARTHING SYSTEM

- Introduction to Earthing
- Types of Earthing
- Earth continuity conductor
- Main earth terminal
- Earthing strip
- Earth Resistance calculation
- Types of Earthing rod & its sizes
- Earth pit placement in the project
- UPS designing for emergency loads
- Lighting Arrestors

MODULE 09 – EXTRA LOW VOLTAGE SYSTEM


- CCTV
- Fire Alarm system
- Access Control System
- Power supply designing for low current system

MODULE 10 – ELECTRICAL SOFTWARES

- DIALUX
- DIALUX EVO
- Current Analyzer
- MS – Excel
- Transformer calculation
- Generator calculation
- UPS & Battery Calculation
- Load distribution Schedule
- Master Converter

MODULE 11 – ELECTRICAL DRAFTING AUTOCAD

- Introduction to Auto cad
- Basic drawing commands
- Modify commands

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- Layers & block
- Lighting layout
- Power layout
- Load distribution schedule
- Single line Drawing
- Schematic Drawing
- Cable tray drawing
- Section drawing
- Earthing drawing
- Equipment placement – transformer, generator, UPS, DB, etc.
- Coordination drawing
- Shop Drawings
- As built drawing
- International drawings
- Model Management
- Layout Management

MODULE 12 – SITE INSTALLATION

- Electrical Work Flow Procedure
- Site Installation Departments
- Site Installation Procedures
- 3M's – Material, Machinery, Manpower
- Installation Task
- Installation of Electrical equipment's – Transformer, generator, UPS, etc.
- Installation of Switch gears
- Installation of Cables, Conduit & Cable Tray
- Safety Requirement - PPE
- Project Handover – O & M

MODULE 13 – QUANTITY SURVEY

- Bill of Quantity - BOQ
- Material Submittals - MS
- Schedules
- EquipmentTechnical Schedules
- Estimation & Costing
- Tracking List

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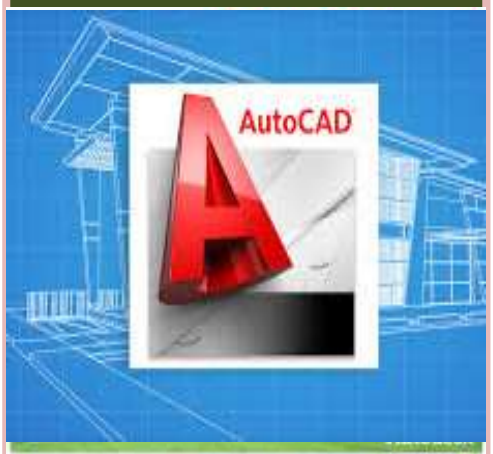

MODULE 14 – QA/QC

- Introduction to QA/QC
- Short circuit test for breaker
- Polarity test
- Circuit continuity test
- Megger test
- Breaker testing
- Pre-Inspections of installations
- Request for Inspection - RFI
- Inspection procedures and techniques
- Inspection tools and equipment
- Quality control of work as per specification
- Testing & Commissioning

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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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We have Expert Faculties in this three Engineering Fields:

Upto 15yrs Exp MECHANICAL ENGINEERS

Upto 08yrs Exp ELECTRICAL ENGINEERS

Upto 07yrs Exp CIVIL ENGINEERS