



# EE015: Electrical Drawings and Schematics



## Training Description:

The ability to read and understand schematics and drawings is an absolute must. Several types of drawings and diagrams will be examined during this course including Block, Pictorial, One-line, Wiring, Terminal, and Schematic.

The differences between these drawings will be emphasized and the purpose and flow of each type will be clarified. In order to learn the symbolic language, you must start at the beginning. In doing so, individual component symbols will be presented along with an explanation of their function and purpose in the circuit.

## Training Objective:

By the end of the training, participants will be able to:

- ✓ Read and Interpret Drawings and Schematics
- ✓ Identify electrical components
- ✓ Use drawings and schematics for Troubleshooting
- ✓ Use drawings and schematics to Communicate with others
- ✓ Create your own drawings
- ✓ Read different types of diagrams such as Block Diagrams,
- ✓ Pictorials, Electrical Formulas, One-line Diagrams, Wiring
- ✓ Diagrams, Terminal Diagrams, Schematics, Electrical Symbols

## Training Designed for:

This course is intended for all Electrical Technicians, Maintenance Electrical Technicians, Apprentices - Alarm Technicians - Electricians – Facility Managers, Non-Electrical Engineers - Plant & Building Engineers, Stationary Engineers - Plant & Facility Managers

## Training Program:

### DAY ONE:

#### PRE-TEST

- ❖ Introduction
- ❖ Electrical Fundamentals for Print Reading
  - Clarifying Terminology, Effects of Current Flow, Importance of Electrical Drawings, Single line diagram, Drawing Control

### DAY TWO:

- ❖ Electrical Drawing Basics
  - Types and Uses of Electrical Drawings
  - Drawing Preparation and Ownership
  - Written Specifications



**DAY THREE:**

- ❖ **Electrical Drawings for Building Maintenance &**
  - **Construction**
    - Component Symbols
    - Wiring & Connections
    - Power Source
    - Breakers
    - Disconnects
    - Fuses Fuse Block
    - Contactors
    - Overloads
    - Loads
    - Grounds
    - Others
  - **Electrical Drawings**
    - Site or Plot Plan
    - Elevation
    - Section
    - Detail
    - One-Line Diagram
    - Electrical Floor Plan
    - Schedules
    - Feeder Schedules
    - Panel board Schedules
    - Motor & Equipment Schedules
    - Wiring
    - Diagrams
    - Reading & Interpreting Code Requirements
    - Real World Applications
  - **Industrial Control Prints**
    - Component Symbols
    - Transformers
    - Fuses
    - Jumpers
    - Switches
    - Relays Timers
    - Transducers
    - Sensors
    - Circuit
    - Loads
    - Grounds
    - Circuit Commons
    - Others



- Understanding
- Relay Operation
- Electrical Schematic Diagrams
- Motor Termination
- Diagrams
- Electrical Ladder Diagrams for Control
- Circuits
- Block Diagrams
- IEC Symbols
- NEMA and IEC Circuit
- Comparison

#### DAY FOUR:

##### ❖ Real-World Applications

- Air Compressors
- HVAC Controls
- Process Temperature
- Controls
- Exterior Lighting Controls
- Generator Controls
- Chemical Process Controls

#### DAY FIVE:

##### ❖ PLC Ladder Diagrams

- PLC Basics - Inputs & Outputs, Comparison of Relay Logic to
- PLC Ladder Logic, Real-World Applications

##### ❖ Course Conclusion

##### ❖ POST-TEST and EVALUATION

### Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request”.

### Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 30% Workshops & Work Presentations, Techniques
- 20% Based on Case Studies & Practical Exercises
- 20% Videos, Software & General Discussions
- Pre and Post Test



## Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

## Training Fees:

**As per the course location** - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01<sup>st</sup> of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

## Training Timings:

### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

**For training registrations or in-house enquiries, please contact:**

**Aisha Relativo:** [aisha@cmc-me.com](mailto:aisha@cmc-me.com)

Tel.: +971 2 665 3945 or +971 2 643 6653 | Mob.: +971 52 2954615

Training & Career Development Department

