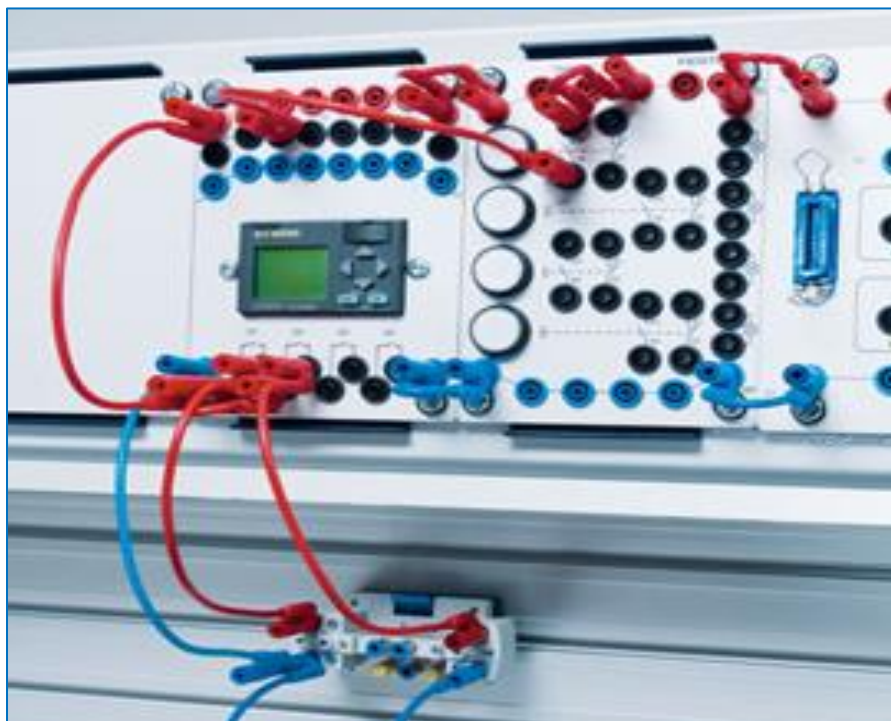




EE025: Pneumatic & Electro-Pneumatic System Design Operation and Maintenance

Training Description:

Pneumatic Air is used for many industrial applications including for actuators and valves, motors, conveying, instrumentation, ESDV circuits etc.

This course is designed to provide basic concepts and practical advice on how to Design Pneumatic & Electro – Pneumatic Circuits and use them for process automation of many units. The course covers fundamentals of pneumatics including the air compressor and properties of air, pneumatic and electro pneumatic components, and industrial applications of the same. It also provides exposure to software tools used for design and simulation.

Guidelines for operations and maintenance are also provided to make it useful for day-to-day requirements.

Training Objectives:

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

- ✓ Learn pneumatic air fundamentals including generation and distribution
- ✓ Understand working principles of pneumatic and electro pneumatic components
- ✓ Learn to carry out successful automation from laboratory to the real-life project
- ✓ Understand operations and maintenance of Pneumatic & Electro – Pneumatic components
- ✓ Know the software tools used for design, engineering and simulation of circuits
- ✓ Develop skills to diagnose / troubleshoot pneumatic and electro pneumatic circuits

Training Designed for:

The course is intended for Mechanical, Electrical, Instrumentation and Process Engineers, Project Engineers, Maintenance Engineers and Supervisors interested to work in the field of Hydraulics, Automation and Process Control. The course will also definitely be beneficial for the all the other department people concerned with the plant operations, production, maintenance and safety. It could be also useful for the procurement and quality personnel.

Training Requirement:

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

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Instrument Air Compressors
- ❖ Distribution of instrument air
- ❖ Component of a Pneumatic System

- ❖ Basics of Cylinders & Valves – Types, Working principles, operations
- ❖ Understanding concepts of Port Numbering / Lettering
- ❖ System and Identification
- ❖ Special Application Valves

DAY TWO:

- ❖ Design & Implementation of Pneumatic Circuits using basic components
- ❖ Concepts of Latches and their Applications
- ❖ Operation and Troubleshooting of Pneumatic Systems

DAY THREE:

- ❖ Introduction to Electro-Pneumatics
- ❖ Solenoid Actuated Valves – Types, Working Principles, Operations and Design
- ❖ E/P and P/E, I/P and P/I converters
- ❖ Electro-Pneumatic Memory Circuits
- ❖ Concept of Electrical Latch and its Applications

DAY FOUR:

- ❖ Design & Construction of Relay & Timer based Logic using components
- ❖ Basics of Sensors - Types, Principles, Integration with pneumatic and electro pneumatic circuits

DAY FIVE:

- ❖ Introduction to advanced Electro Pneumatics
- ❖ Introduction to PLC Based Automation
- ❖ **Case studies:** Real life applications will be presented
- ❖ Special videos will be shown for better understanding
- ❖ **Course Conclusion**
- ❖ **POST-ASSESSMENT and EVALUATION**

Training Methodology:

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

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Fees:

TBA 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 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Certificate(s):

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

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 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

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

Aisha Relativo - Training & Career Development Manager

aisha@cmc-me.com / training@cmc-me.com

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