London TDM

Mechanical and Electrical Engineering Training Courses

Course Venue: United Arab Emirates - Dubai

Course Date: From 17 May 2026 To 21 May 2026

Course Place: Downtown Dubai

Course Fees: 5,000 USD

Introduction

The "Industrial Automation and Control Systems" course is designed to provide participants with a comprehensive understanding of the principles and practices involved in the automation of industrial processes. Over the span of five days, attendees will explore various components, technologies, and strategies essential for implementing and managing modern industrial control systems.

Objectives

- Understand the fundamentals of industrial automation and control systems.
- Familiarize with various types of control systems and their applications.
- Learn about the latest technologies and trends in industrial automation.
- Analyze and design effective automation solutions for various industries.
- Develop the skills to manage, maintain, and troubleshoot control systems.

Course Outlines

Day 1: Introduction to Industrial Automation

- Overview of industrial automation and its significance in modern industries.
- Types of automation systems and their applications.
- Key components of an automation system: sensors, actuators, and controllers.
- Basic concepts of control systems and feedback loops.
- Introduction to standards and safety practices in industrial automation.

Day 2: Control Systems and Technologies

- Detailed exploration of various control systems (PLC, DCS, SCADA).
- Introduction to programmable logic controllers (PLC) and programming languages.
- Understanding Distributed Control Systems (DCS) architecture and applications.
- Supervisory Control and Data Acquisition (SCADA) systems and their functionalities.
- Case studies on successful implementation of control systems in industries.

Day 3: Process Control and Instrumentation

- Fundamentals of process control and its role in automation.
- Control strategies: PID control, feedforward, and feedback control.
- Introduction to industrial instruments and their measurement principles.
- Calibration and maintenance of measurement instruments.
- Hands-on session: Building and testing basic control loops.

Day 4: Advanced Automation Technologies

- Exploring the Internet of Things (IoT) in industrial automation.
- Role of Artificial Intelligence (AI) and Machine Learning (ML) in automation.
- Cybersecurity in industrial automation systems.
- Understanding cloud-based automation and edge computing.
- Future trends and innovations in industrial automation.

Day 5: Implementation and Troubleshooting

- Designing and implementing industrial automation solutions.
- Troubleshooting and maintaining control systems.
- Critical thinking for solving real-world automation challenges.
- Project management principles for automation projects.
- Workshop: Teams work on real-life scenarios to present automation solutions.