London TDM

Mechanical and Electrical Engineering Training Courses

Course Venue: United Arab Emirates - Dubai

Course Date: From 31 May 2026 To 04 June 2026

Course Place: Downtown Dubai

Course Fees: 5,000 USD

Introduction

Instrumentation and Control Engineering is a critical field that focuses on designing, developing, and maintaining systems used to control and measure various industrial processes. This 5-day professional course is designed to equip participants with foundational knowledge and practical skills necessary to excel in this discipline, ensuring smooth and efficient operations in industrial settings.

- Understand the fundamentals of instrumentation and control systems.
- Gain insights into the various types of sensors and transducers used in the industry.
- Learn about the PID control strategy and its applications.
- Develop the ability to design and implement control systems.
- Analyze and troubleshoot instrumentation and control issues effectively.

Course Outlines

Day 1: Introduction to Instrumentation and Control Systems

- Overview of Instrumentation and Control Engineering
- Types and Functions of Instruments in Industry
- Basic Concepts of Measurement Systems
- Signal Conversion and Conditioning
- Introduction to Control Systems

Day 2: Sensors and Transducers

- Types of Sensors and their Applications
- Working Principles of Transducers
- Selection Criteria for Sensors and Transducers
- Calibration and Maintenance of Sensors
- Hands-on Session: Sensor Testing and Calibration

Day 3: Control Theory and Controllers

- Introduction to Control Theory
- PID Controllers: Proportional, Integral, and Derivative Control
- Tuning of PID Controllers
- Introduction to Advanced Control Strategies
- Practical Session: PID Controller Implementation

Day 4: Control System Design and Implementation

- Steps in Designing a Control System
- Developing Control Algorithms
- Hardware and Software for Control Systems
- Case Study: Design of a Sample Control System
- Workshop: Building a Simple Control System

Day 5: Troubleshooting and Maintenance

- Common Issues in Instrumentation and Control Systems
- Diagnostic Tools and Techniques
- Preventive vs Predictive Maintenance
- Developing Maintenance Schedules
- Final Assessment and Course Review