



London TDM

# Mechanical and Electrical Engineering Training Courses

**Course Venue:** United Arab Emirates - Dubai

**Course Date:** From 05 July 2026 To 09 July 2026

**Course Place:** Downtown Dubai

**Course Fees:** 5,000 USD

## Introduction

The "HVAC Design and Maintenance" professional course is designed to provide participants with a comprehensive understanding of the principles and practices involved in the design, installation, and maintenance of Heating, Ventilation, and Air Conditioning (HVAC) systems. This course is tailored for engineers, architects, maintenance technicians, and anyone involved in the HVAC industry seeking to enhance their expertise and ensure the efficient operation of HVAC systems.

## Objectives

- Understand the fundamental principles of HVAC systems.
- Develop skills in designing HVAC systems for various applications.
- Learn techniques for efficient installation and maintenance of HVAC components.
- Identify and troubleshoot common HVAC problems effectively.
- Gain insights into energy-efficient and sustainable HVAC practices.

## Course Outlines

### Day 1: Introduction to HVAC Systems

- Overview of HVAC: Definition and Components
- Principles of Heating, Ventilation, and Air Conditioning
- Types of HVAC Systems and Applications
- Basic Thermodynamics and Heat Transfer
- Regulatory Standards and Codes in HVAC

### Day 2: HVAC System Design Fundamentals

- Designing for Load Calculations and Considerations
- Selection of HVAC Components and Equipment
- Ductwork Design and Air Distribution Strategies
- Indoor Air Quality and Ventilation Requirements
- Energy-Efficient Design Practices

### Day 3: Installation and Commissioning of HVAC Systems

- Key Steps in HVAC System Installation
- Site Preparation and Safety Measures
- System Commissioning and Performance Testing
- Understanding Control Systems and Automation
- Documentation and Reporting Procedures

### Day 4: Maintenance and Troubleshooting

- Preventive Maintenance Techniques
- Troubleshooting Common HVAC Problems
- Repair Strategies and Replacement Practices
- Maintaining Indoor Air Quality and Comfort
- Case Studies in HVAC Maintenance

## **Day 5: Advanced Topics and Emerging Trends**

- Smart HVAC Technologies and IoT Integrations
- Sustainable and Green Building Practices
- Renewable Energy Sources in HVAC
- Future Trends and Innovations in HVAC Industry
- Course Summary and Assessment