London TDM

Mechanical and Electrical Engineering Training Courses

Course Venue: United Kingdom - London

Course Date: From 31 May 2026 To 04 June 2026

Course Place: London Paddington

Course Fees: 7,500 USD

Introduction

This 5-day professional course on Power Factor Correction and Harmonics is designed to provide participants with comprehensive knowledge and practical skills to manage power quality issues in electrical systems. The course covers theoretical concepts, practical implementation, and troubleshooting techniques relevant to power factor correction and harmonic distortion in electrical networks.

- Understand the significance of power factor in electrical systems.
- Identify and analyze common causes of poor power factor.
- Implement power factor correction techniques effectively.
- Recognize and mitigate the effects of harmonics on electrical systems.
- Develop strategies for regular maintenance and troubleshooting of power quality issues.

Course Outlines

Day 1: Fundamentals of Power Factor

- Introduction to Power Factor and its Importance
- Components of Apparent, Real, and Reactive Power
- Measuring Power Factor
- Effect of Load Types on Power Factor
- Basic Calculations and Examples

Day 2: Power Factor Correction Methods

- Benefits of Power Factor Correction
- Overview of Correction Techniques: Capacitors and Synchronous Condensers
- Design and Installation of Capacitor Banks
- Automatic Power Factor Correction Systems
- Cost-Benefit Analysis

Day 3: Introduction to Harmonics

- Understanding Electrical Harmonics
- Sources and Characteristics of Harmonics
- Harmonic Indices and Measurements
- Impact of Harmonics on Power Systems
- Regulations and Standards Governing Harmonics

Day 4: Harmonics Mitigation Techniques

- Passive Filters Design and Application
- Active Harmonic Filters and Their Role
- Hybrid Harmonic Filters
- Harmonic Balancing Using Transformers
- Case Studies on Harmonics Mitigation

Day 5: Practical Applications and Troubleshooting

- Identifying Power Quality Problems in Installations
- Implementing Power Factor Correction in Existing Systems
- Troubleshooting Harmonic Distortions
- Maintenance Strategies for Power Quality Equipment
- Final Course Review and Q&A Session