



London TDM

# Oil and Gas Industry Training Courses

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

**Course Date:** From 26 October 2025 To 30 October 2025

**Course Place:** Downtown Dubai

**Course Fees:** 5,000 USD

## Introduction

This comprehensive 5-day professional course is designed to provide participants with in-depth knowledge and understanding of power generation and transmission systems. The course covers the fundamental concepts, technologies, and challenges associated with generating and transmitting electrical power efficiently and sustainably.

## Objectives

- Understand the fundamental principles of power generation systems.
- Explore various types of power generation technologies and their applications.
- Gain insights into the components and operation of power transmission systems.
- Learn about the challenges and solutions in modern power systems.
- Analyze case studies to understand real-world applications and innovations.

## Course Outlines

### Day 1: Overview of Power Generation Systems

- Introduction to energy conversion principles
- Overview of different energy sources: fossil fuels, renewables, and nuclear
- Basic components of power plants
- Environmental and economic considerations
- Case study: Global energy production trends

### Day 2: Fossil Fuels and Nuclear Power

- Coal, natural gas, and oil-based power plants
- Technology and efficiency of thermal power stations
- Introduction to nuclear reactors and fuel cycles
- Safety and waste management in nuclear power
- Recent advancements in conventional power generation

### Day 3: Renewable Energy Sources

- Solar power technologies and applications
- Wind energy systems and their integration
- Hydroelectric power and its environmental impact
- Emerging technologies: biomass, geothermal, and tidal
- Future trends in renewable energy generation

### Day 4: Power Transmission Systems

- Key components of the electric grid
- High-voltage transmission lines and transformers
- The role of substations in power distribution
- Challenges in long-distance power transmission
- Smart grids and their role in modern energy systems

## **Day 5: Challenges and Innovations in Power Systems**

- Understanding grid stability and reliability
- Technological innovations in grid management
- Impact of policy and regulation on power systems
- Integrating distributed energy resources
- Case studies: Smart grid projects and innovative solutions