

# Overhead Lines, Maintenance and Construction Course

## Venue Information

---

**Venue:** London UK

**Place:**

**Start Date:** 2025-12-08

**End Date:** 2025-12-12

## Course Details

---

**Net Fee:** £4750.00

**Duration:** 1 Week

**Category ID:** EAPET

**Course Code:** EAPET-43

## Syllabus

---

### Course Description

Overhead Lines form the majority of Transmission and Distribution Circuits due to their significantly lower cost compared to equivalent cables at the same voltage and current ratings. An Overhead Line consists of three wires, one for each phase, known as conductors. At transmission voltage levels, the conductors are typically strung on steel-latticed towers of varying shapes and sizes. At distribution (lower voltage) levels, wooden poles and occasionally reinforced concrete structures are used.

This seminar covers the full range of overhead line technology across both transmission and distribution circuits, focusing on design, construction, operation, and maintenance practices.

### Course Objective

- Enhance participants' knowledge of Overhead Line Technology and familiarize them with the latest developments.

---

## **Overhead Lines vs Underground Cables**

### **Support Structures**

- Steel Lattice Towers
- Wooden Poles
- Overhead Line Foundations
- Soil Investigation
- Foundation Types & Design
- Site Works

### **Overhead Line Routing**

- Objectives & Preliminary Routing
- Survey Equipment Requirements
- Aerial & Ground Surveys
- Soil Condition Analysis
- Wayleaves, Access & Terrain
- Route Optimisation
- Detailed Line Survey & Profile
- Computer-aided Techniques

### **Structures, Towers & Poles**

- Environmental Conditions & Parameters
- Impact on Support Design
- Conductor Loads
- Substation Gantry Design
- Lattice Steel Tower Design & Testing
- Pole and Tower Types

### **Conductors**

- Conductor Selection & Types
- Aerial Bundled Conductor
- Breaking Strength & Bi-Metal Connectors

### **Lightning Protection**

- Calculated Ratings & Power Capacity
- Corona Discharge & Line Rating Calculation
- Worked Examples & Exercises

### **Design Span, Clearances and Loadings**

- Distribution & Transmission Voltage Clearances
- Clearance Calculations
- Worked Examples & Exercises

### **Overhead Line Fittings**

- Aerodynamic Phenomena
- Suspension Clamps
- Sag Adjusters
- Other Fittings

### **Overhead Line Impedance**

- Inductive Reactance
- Capacitive Reactance
- Resistance
- Worked Examples & Exercises

### **Overhead Line Maintenance**

- Case Studies