Power and Power Stations (Design, Installation and Maintenance) Course

Venue Information

Venue: London UK

Place:

Start Date: 2026-12-08

End Date: 2026-12-12

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: EAPET

Course Code: EAPET-45

Syllabus

Course Description

Modern Electric Power Systems have shifted from regulated structures to competitive markets, driving innovation in energy use, efficiency, and environmental responsibility. This transformation has also been fueled by advances in computer technology, enabling widespread adoption of digital instrumentation in power plant control rooms. Today's power plants represent a diverse, complex mix of technologies unlike ever before.

This course offers comprehensive coverage of electric power systems, spanning generation, transformation, transmission, distribution, and utilization of electric energy. Participants will gain insights into the modeling, planning, design, monitoring, and control of modern power systems, with discussions on deregulation, telecommunications integration, and emerging operational challenges.

real-world applications.

Course Outline

- Overview of modern power system components and their functions.
- Concepts of power generation, including synchronous machinery, thermal plants, and distributed utilities.
- Transformer theory and principles, types, features, and functions.
- Transmission system structure, components, accessories, and conductor sag & tension calculations.
- Types of substations with grounding, lightning protection, and fire safety considerations.
- Distribution system modeling, analysis, operation, and control.
- Electric power utilization, metering, load characterization, and load modeling.
- Power system analysis, simulation, and fault analysis techniques.
- Principles of protection and transients: generator protection, digital relaying, lightning, switching surges, and insulation coordination.
- Power system dynamics and stability methods used in modern systems.
- Planning and reliability principles applied to power systems.
- Power electronics and power quality applications in modern grids.
- Economic dispatch of thermal units and solution methods.
- Power system security factors and environmental control variables.