

Power Systems Engineering

Course overview

A comprehensive ten-day course offering a thorough grounding in all aspects of power systems engineering for newly qualified engineers or engineers from other disciplines. The programme combines much of the learning from EA Technology's extensive range of specialist, technical short courses to give you a in-depth introduction to all aspects of power systems engineering in networks up to 132kV.

You will learn about each stage of electrical power systems and their management, from the history and background of the UK power industry and current regulations, standards and best practice, through a broad review of equipment such as cables, transformers, switch-gear, and overhead lines, to an understanding of how to combine these elements in substations and networks.

The course will also cover asset management, protection and failure investigation, including the latest Condition Based Risk Management techniques being developed at EA Technology and the growing field of embedded generation.

The course is delivered by industry leading experts and will give you a true perspective on real life operations through site visits to a cable manufacturer and a CHP generation site.

Who should attend?

The course is the ideal foundation for a career in power systems engineering, developing your understanding of different disciplines within the sector and assisting your choice of specialisation. It will particularly benefit:

- Graduate engineers with an electrical background
- Engineers who have converted to a power systems environment
- Internal, industrial staff or technicians progressing to undertaking engineering duties

Benefits of attending this course

- An essential foundation in the principles and practice of power systems engineering
- Helps inform career specialisation decisions
- Develop an understanding of the interaction between power system elements
- See power engineering in action with site visits to a cable manufacturer and a paper processing plant

Cost

Ten-day course: £2,250 + VAT

Five-day course (week one only): £1,575 + VAT

Location

EA Technology, Capenhurst, Chester, CH1 6ES

Substations Courses

Specialist Courses

Cables Courses

Power Networks Courses

Protection Courses

Tailored Programmes



Power Systems Engineering

Course programme

Delegates can elect to attend the full ten-day course, or the five-day (week one) course with site visits in week two limited to the first 30 delegates. For the first time we are able to offer two alternative sessions for engineers with an interest in variable speed drives and/or energy efficiency. An informal course dinner is held in week one, providing an opportunity to network with selected speakers and fellow delegates.

Week two includes informative site visits developed and delivered in a manner to encourage insight into their individual issues, as well as increasing the understanding of the supplementary modules that make up this course.

The site visit to Prysmian Cables provides a real insight into the development and production of power cables, joints, and terminations and is delivered using on site classroom facilities alongside a tour of production processes.

The site visit to UPM Shotton, the largest newsprint mill in the UK, starts with a tour of the production process and electrical distribution system, before examining the use of an unusual 660V plant supply system with high resistance earthing.

Week one

- Introduction and History
- Transmission and Distribution in the UK
- Network Components and Planning
- Network Design
- Cables
- Switchgear
- Transformers
- Overhead Lines Design and Operation*
- Commercial Arrangements*
- Basic Protection including CT and VT
- Introductions to Fault Level Calculations
- Substation Earthing
- Lightning Protection
- Asset Management: an Overview of Systems

* An alternative session on Motors/Variable Speed Drives is available to engineers dependent upon area of specialisation.

Week two

- Condition Assessment of HV Assets
- Condition Based Risk Maintenance
- Site visit to Prysmian Cables, Wrexham
- DNO Failure Investigation*
- Renewable and Distributed Generation
- Industry Safety
- Site visit to UPM Kymmene, Shotton
- Power Quality
- Commissioning and Testing
- Course Review

* An alternative session on Energy Efficiency is available to engineers dependent upon area of specialisation.

Programme may be subject to amendment

