



Power Skills Centre[®] Course listings & schedule



Training

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EA Technology

EA Technology has a unique technical heritage within the power industry stretching back over five decades. Our specialist expertise has been used to develop an extensive range of power engineering courses.

Providing applied guidance from industry practitioners, these courses offer highly effective and specialised development routes. Our training provision has been externally assured as complying with the highest standards in the field.

Most of the specialist courses in this schedule run once or twice a year and many are often oversubscribed, so please check the dates and availability of any courses that you are interested in.

We can also provide on site training and customised training programmes so please get in touch if you have a specific requirement that you would like us to assist you with.

Click here for further information or to book a place.

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Substation courses

Insulating Oil Diagnostics and Analysis

Days 1

This course will cover the sampling, analysis, storage and disposal of insulating oil used in transformers and switchgear and its role in condition-based asset management. It will provide participants with an understanding of this condition assessment technique which can help identify potential faults, prevent failures and improve strategic planning for maintenance, repairs and replacement.

Introduction to Earthing and Lightning Protection Systems

Days 1

This one-day course will give you a basic understanding of earthing on low, medium and high voltage systems (distribution and transmission), how and why we test earthing systems and an understanding of earthing construction. This practical-based programme includes both the theoretical and practical aspects of earth testing construction.

The course also covers, the basics of lightning and its effects, to the use of risk assessment in the formulation of protection strategies, in line with current standard BS EN 62305-2.

Introduction to Switchgear and Transformers

Days 1

This course is designed to give delegates with no previous HV electrical plant training, sufficient knowledge, understanding and awareness of the operation and application of the main types of switchgear and transformers currently in use.

Measuring Partial Discharge (PD)

Days 2

A two-day course from the pioneers of Partial Discharge (PD) technology, covering PD theory, PD detection instruments and PD measuring techniques. The first day of the course will focus on hand-held equipment while the second day will cover the installation and operation of the UltraTEV® Monitor in detail.

SF₆ Management

Days 1

This one-day course is designed to give delegates all the information that is required to ensure they stay up to date with the latest SF₆ legislation. The course will assist with making asset management decisions by explaining the practical elements of running a network that includes assets containing SF₆.

Delegates will also be given an understanding of what SF₆ is through to the commissioning, inspection, and maintenance of their SF₆ assets and the responsibilities they have to their staff working hands-on with SF₆. Environmental issues will be discussed, and guidance provided on all aspects of managing a company's inventory of SF₆ to show compliance with the relevant legislation.

SF₆ Training and Certification

Days 2

An essential two-day course covering the UK training requirements for anyone involved in the handling or recovery of SF₆ filled high voltage switchgear, leading to certification that is required and recognised throughout the UK*.

*EU 517/2014, 2015/2065, 2015/2066 and 2015/2068 have been retained in UK legislation, but have been amended due to the UK leaving the EU and now only apply in the UK.

Substation Design

Days 2

High voltage substation design is a complex engineering activity that embraces engineering functions from numerous disciplines. This intensive course considers the aspects required to design a high voltage air or gas insulated substation. It looks at the design process, substation design methods and interfaces required to build a substation.

Substation Earthing

Days 3

A three-day course providing a comprehensive review on the latest developments in earthing practice at transmission and distribution voltages. It considers specifications, regulations (CENELEC TC112), earth grids, resistivity, site areas, conductors and earth rods.

Switchgear Technology for Power Systems

Days 2

This course considers the technical options and develops an understanding of switching phenomena essential for reliable system operation, as well as providing an essential update on technology and practice in this field.

Transformers for Power Systems

Days 2

An essential two-day course covering all aspects of transformer specification, operation, and protection and maintenance, including condition assessment and asset management.

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Specialist courses

The Essentials of Asset Management

Days 2

This course offers a unique perspective on Asset Management; it provides practical lessons on a variety of approaches and ‘how to’ guidance for key stages of Asset Management implementation. It introduces the main concepts and common approaches to the management of physical assets from the relevant published standards and draws on the experience of Asset Management strategists, trouble-shooters, auditors and operational engineers.

Failure Investigation

Days 1

This course examines best practice, procedures and methods for failure analysis and investigation. It covers well-documented investigation techniques, handling and analysis of evidence and reporting, panels of inquiry and how the impact of information gleaned from investigations can be used for asset management decisions.

Introduction to Electrical Networks and the Electricity Supply Industry

Days 1

This course has been specifically designed to demystify the terminology used to explain the purpose, principals and components of electrical networks. It is aimed at the growing workforce that play a vital role in the support, management, and evolution of modern electrical networks but do not have a power or electrical engineering background. The course will help delegates to understand industry roles and structures, develop informed perspectives and provide the context for more effective communication.

Power Systems Engineering

Days 5

A comprehensive five day course offering a thorough grounding in all aspects of power systems engineering for newly qualified engineers or engineers from other disciplines. The course covers Power systems engineering up to 132kV

- Regulatory framework of the industry
- Network planning
- Cables
- Switchgear
- Transformers
- Overhead lines design and operation (alternative session Motors/Variable Speed Drives)
- Protection
- Fault level calculations
- Substation earthing
- Lightning protection
- Asset Management
- Condition Assessment of HV assets
- Condition Based Risk Management
- Failure investigation (alternative session: Energy Efficiency)
- Renewable and distributed generation
- Industry safety
- Power Quality
- Commissioning and testing
- Site visit to an Industrial Electrical Network Operator.

Lightning Protection for MOD Sites with Explosive Facilities Protection

Days 2

This course takes the delegates through the basics of lightning including the major effects it has on the Ministry of Defence sites that contain explosives facilities. It takes delegates through the basics of lightning and lightning protection strategies. The course explains JSP482 lightning protection requirements, compares national and international standards and links BS EN 62305 with MOD practice. The maintenance, testing and compliance of lightning protection systems are also covered.

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Specialist courses (continued)

Project Management: Managing Electrical Projects

Days 2

This course aims to help managers, engineers and technicians to become effective managers of electrical projects. Delegates can work through case study examples to reinforce the course's key learning points. The course is equally applicable to those who manage single projects or a portfolio of electrical projects at all voltage levels from HV/LV, 132/33kV through to 400/275kV.

Lightning Protection, Risk Assessment and Design: BS EN 6230

Days 2

A comprehensive two-day course covering everything from the basics of lightning and its effects, to the use of risk assessment in the formulation of protection strategies. It will not only provide you with a clear understanding of the threat from lightning and the protection options available, but also introduce you to the economics involved in protection system selection.

Power Quality and Harmonics

Days 2

A two-day power quality course that explains the Engineering Recommendations associated with power quality, and demonstrates its practical application through worked examples and case studies.

Cables courses

Cable Joints, Terminations and Accessories

Days 2

A two-day course providing a comprehensive update on the latest in cable joints, terminations and accessories. Topics include XLPE cable, mechanical connectors, elastomeric insulation systems, resin systems, heat shrink technology and their applications.

Cables for Power Systems: Part One

Days 2

A comprehensive overview of power cables up to 33kV, from the fundamentals of power cable engineering and design, through asset management, joints and terminations, fault location and analysis.

Cables for Power Systems: Part Two

Days 2

A two-day course on cable system engineering, using example circuits, to take the participants from the planning stage through the preparation of technical and commercial specifications for the tender document, bid adjudication, contract award, manufacture, installation, maintenance and operation. The management of existing cable assets is considered in terms of condition assessment, life estimation, repair and diversions.

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Power Networks courses

Application of Variable-Speed Drives and Rotating Machines

Days 2

The introduction to this course takes delegates quickly through basic theory for rotating machines and then moves on to introduce the power electronics used in AC variable-speed drives. The application of variable-speed drives includes performance, protection and matching torque demand to torque delivery. It then moves on to external factors for selecting variable-speed drives, harmonics, filters and the interface with electricity utilities including the demonstration of a power system analysis programme.

Distributed Generation

Days 2

A two-day course focussing on distributed generation and its impact on both LV and HV networks, including connection issues, network design and operation, regulations, commercial aspects and the future of distributed generation.

Distribution Overhead Lines

Days 2

This two-day course has been designed to cover many overhead line issues of the moment including the effect of European regulations on our standards, line design, lightning protection, and helicopter and foot line patrols, including condition assessment, and live line working.

HV Network Planning and Design

Days 2

This two-day course combines the theory of network planning to relevant GB standards and legislation with the practice of carrying out load flow studies and calculations to ensure compliance with those standards. Fault Level, Voltage and Network Capacity Planning are all considered along with supporting knowledge in the areas of earthing design, basic HV protection and typical HV supply connection arrangements.

LV Distribution Network Planning and Design with optional Connect course

Days 2 with optional 3rd day for Connect software training

Cost

This network design foundation course introduces the basics of electricity distribution, the components, and the language of LV distribution networks before considering how these components are put together to produce a safe, reliable and economically viable LV distribution network. Using a series of tutorials and practical exercises, your knowledge of load diversity, thermal constraints, voltage constraints, fault level, earthing, power quality and protection will be built up in sufficient detail for you to be able, by the end of the two days, to create (and justify!) a simple compliant LV distribution network design.

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Protection courses

Commissioning and Testing

Days 2

A practical course covering the complete process of commissioning and testing new protection systems prior to initial switch-on, and the testing of existing asset protection to prove its continuing integrity.

Power System Protection: Part One

Days 2

A comprehensive course covering the principles of power system protection. The course includes practical exercises and a 'walk through' the LV and HV system. It provides a very detailed introduction to essential protection principles at a level that does not require knowledge of complex numbers.

Power System Protection: Part Two

Days 3

This course covers the role of protection, fault characteristics and design principles for a range of networks and network assets including a detailed examination of transformers and embedded generators. The management of protection is examined including the use of new knowledge based systems to create cost-effective maintenance procedures. This course includes complex numbers and introduces inductance and capacitance.

Tailored programmes

Graduate Development and Conversion Programmes

Structured development routes for a range of power engineering roles and competence levels, including graduates, apprentices, new entrants and career changers. Our modular development programmes can help increase your training capacity. We can work with you to develop and deliver structured training programmes that provide a comprehensive route to specified levels of knowledge and professional competence.

Bespoke Training

Dates [Call for details](#)

In addition to our scheduled programme of courses we can, on request, deliver courses at locations and dates to suit you. We can also develop bespoke training courses to meet your specific requirements.

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Qualification programmes

City & Guilds Level Two Electrical Power Engineering - Transmission and Distribution

Duration 24 months

Dates Ongoing enrolment

The City & Guilds level 2 Diploma in Electrical Power Engineering – Transmission and Distribution (2304-17) is available as both a structured, taught programme for groups of learners within an organisation, and as a distance-learning course for industry engineers and technicians requiring a formal qualification, apprentices and new entrants to the industry.

This unique qualification is specifically aimed at gaining the fundamental knowledge required for a career in the electricity supply industry.

Accredited programmes

City & Guilds Accredited Electrical Power Engineering Foundation Programme – Distance Learning

Duration 6 months

Dates Ongoing enrolment

This course provides essential underpinning knowledge of the UK electricity transmission and distribution network. Commencing with an overview of the network, learners will gain an understanding of its construction, the principles, operation and function of its component parts and how the network is managed.

The programme also covers how electricity is generated, the regulatory system, system earthing, protection, testing and fault diagnosis.

On completion of the study the learner has the option to undertake an online assessment and candidates who successfully complete the assessment will receive a City & Guilds Accredited Foundation Certificate.

City & Guilds Accredited Protection Commissioning and Testing Programme (PCT)

Duration 24 months

This programme comprises of three modules, our 2-day Power System Protection: Part One course, 3-day Power System Protection: Part Two course and our 2-day Commissioning and Testing course.

Each designed to offer the most up to date and best working practises within the field of protection and commissioning.

To meet the programme requirements, it is expected delegates attend and complete the three modular assessments, within 24-months of commencement of the first course.

City & Guilds Accredited Earthing and Protection Programme (E&P)

Duration 24 months

This programme comprises of three modules, our 3-day Substation Earthing course, 2-day Power System Protection: Part One course and 3-day Power System Protection: Part Two course.

Each module is designed to offer the most up to date and best working practises within the field of earthing and protection, while the programme overall enforces the understanding of the crossover between these two critical areas of engineering.

To meet the programme requirements, it is expected delegates attend and complete the three modular assessments, within 24-months of commencement of the first course.

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Global Footprint

At EA Technology we specialise in asset management solutions for owners and operators of power network assets.



Founded in 1966 we have over 50 years' experience in the industry and 6 regional offices around the world to support our global customer base.

We work with a lot of our clients on a long-term basis to help them safeguard their power networks.

We advise our clients on strategy and implementation of a range of technology solutions to manage power assets, delivering maximum life and minimise cost.



Safer, Stronger, Smarter Networks

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