



POWER AND ELECTRICAL TRAINING

Substation Design, Installation, Commissioning and Maintenance

5 day course

Classroom, online or in-house

Course overview

A substation is where a network's reliability is largely decided, and most of the decisions are made at design and never revisited. This course runs the full lifecycle. Delegates work through layout and busbar configuration and the availability each arrangement delivers, primary plant selection, earthing and lightning protection design, and auxiliary supplies including battery and charger sizing. Installation and commissioning cover the tests that must pass before energisation and the documentation that has to exist afterwards. The course closes on maintenance strategy and the practical constraints of working on an energised substation, and addresses the conditions common to the region including dust, high ambient temperature and constrained outage windows.

What you will learn

- Select a busbar configuration against the availability required
- Specify primary plant appropriate to the duty and the environment
- Design earthing and lightning protection for a substation
- Size auxiliary supplies including batteries and chargers
- Plan installation and the commissioning tests required before energisation
- Produce the documentation the station will be operated from
- Build a maintenance strategy that works within available outage windows

Who should attend

- Substation design and project engineers
- Utility and industrial electrical engineers
- Commissioning engineers
- Consulting engineers
- Maintenance and operations engineers

Course outline

- 01 Substation layouts and busbar configurations
- 02 Availability and redundancy by arrangement
- 03 Primary plant selection and environmental duty
- 04 Earthing and lightning protection design
- 05 Auxiliary supplies, batteries and chargers
- 06 Installation practice
- 07 Commissioning tests before energisation
- 08 Documentation, maintenance strategy and outage constraints

Upcoming dates

Dates	Venue	Format	Fee per delegate
19 to 23 October 2026	Harare, Zimbabwe	Classroom	USD 1,325
14 to 18 December 2026	Pretoria, South Africa	Classroom	R19,950
8 to 12 February 2027	Online	Online	R8,500
15 to 19 March 2027	Maseru, Lesotho	Classroom	R19,950



Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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