



POWER AND ELECTRICAL TRAINING

Electrical Power System Analysis and Design

5 day course

Classroom, online or in-house

Course overview

This course covers the studies that underpin the design and operation of an electrical network. Delegates work through load flow analysis, short circuit study, motor starting and voltage dip assessment, harmonic analysis, and arc flash study, and learn to set up each study correctly, interpret the output and act on it. Emphasis is placed on the modelling assumptions that determine whether a study result is meaningful, because most study errors originate in the data rather than the software. Delegates finish able to specify a study, review a consultant's output critically and translate results into design or operational decisions.

What you will learn

- Set up and interpret a load flow study
- Perform short circuit calculations and apply the results to equipment rating
- Assess motor starting and voltage dip on a network
- Carry out harmonic analysis and evaluate mitigation
- Interpret an arc flash study and its assumptions
- Identify modelling assumptions that invalidate a study
- Review a consultant's study output critically

Who should attend

- Electrical design and system engineers
- Consulting engineers
- Utility planning engineers
- Industrial electrical engineers
- Technical staff commissioning or reviewing network studies

Course outline

- 01 Network modelling and the data that determines study validity
- 02 Load flow analysis and interpretation
- 03 Short circuit study and equipment rating
- 04 Motor starting and voltage dip assessment
- 05 Harmonic analysis and mitigation
- 06 Arc flash study and its assumptions
- 07 Translating study results into design decisions
- 08 Reviewing a consultant's output critically

Upcoming dates

Dates	Venue	Format	Fee per delegate
7 to 11 December 2026	Windhoek, Namibia	Classroom	R19,950
4 to 8 January 2027	Durban, South Africa	Classroom	R19,950
25 to 29 January 2027	Johannesburg, South Africa	Classroom	R19,950
15 to 19 February 2027	Online	Online	R8,500



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**.

AfriScience Group | +27 61 536 6531 | info@afriScience.co.za | Pretoria, Gauteng, South Africa