



POWER AND ELECTRICAL TRAINING

Overhead Transmission Lines: Design, Structures and Foundations

5 day course

Classroom, online or in-house

Course overview

An overhead line is a civil structure carrying an electrical function, and most of its cost and risk sits in the structures and foundations rather than the conductor. This course covers the whole design. Delegates work through route selection and survey, conductor selection and the sag and tension calculation that governs clearance, and the loading cases including wind and ice that determine structure design. Structure types, foundations and their design against soil conditions follow. Insulation coordination, earthing and lightning performance are covered, and the course closes on construction, stringing and the inspection regime an installed line needs.

What you will learn

- Select a route and specify the survey it requires
- Select conductors and calculate sag and tension against clearance
- Apply loading cases including wind and ice to structure design
- Choose structure types and design foundations for the soil conditions
- Coordinate insulation and design earthing for lightning performance
- Plan construction and stringing operations
- Specify the inspection regime an installed line requires

Who should attend

- Transmission line design engineers
- Utility project and construction engineers
- Civil engineers working on line structures
- Consulting engineers
- Line inspection and maintenance staff

Course outline

- 01 Route selection and survey
- 02 Conductor selection
- 03 Sag, tension and clearance
- 04 Loading cases: wind, ice and broken conductor
- 05 Structure types and selection
- 06 Foundation design against soil conditions
- 07 Insulation coordination, earthing and lightning
- 08 Construction, stringing and inspection

Upcoming dates

Dates	Venue	Format	Fee per delegate
28 September to 2 October 2026	Dar es Salaam, Tanzania	Classroom	USD 1,325
23 to 27 November 2026	Online	Online	R8,500
11 to 15 January 2027	Lusaka, Zambia	Classroom	USD 1,325
8 to 12 February 2027	Pretoria, South Africa	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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