



MAINTENANCE MANAGEMENT TRAINING

Automotive Electrical Systems and Diagnostics

3 day course

Classroom, online or in-house

Course overview

Electrical faults are where workshops lose the most time, because a technician without a method replaces parts until the symptom goes away and often never learns what was wrong. This course replaces that with measurement. Delegates work through electrical fundamentals applied to a vehicle: voltage drop, resistance and the difference between a circuit that works and one that works well enough to be intermittent. Reading wiring diagrams is covered in detail, since a diagram is the only map of a modern harness. Batteries, charging and starting systems follow, with testing that distinguishes a flat battery from a charging fault. Earthing and voltage drop testing are addressed as the single most useful diagnostic skill. Lighting, switching and relay circuits are covered. Sensors and actuators follow, including how to test one rather than assume it. Communication networks are introduced at a practical level. Diagnostic equipment is covered, including multimeter and oscilloscope technique. The course closes on intermittent faults, on parasitic drain and on documenting a repair.

What you will learn

- Apply voltage drop and resistance testing to vehicle circuits
- Read a wiring diagram and trace a circuit through a harness
- Test batteries, charging and starting systems conclusively
- Find earthing faults through voltage drop measurement
- Test sensors and actuators rather than replacing them speculatively
- Use a multimeter and oscilloscope effectively
- Chase intermittent faults and parasitic drain, and document the repair

Who should attend

- Auto electricians and vehicle technicians
- Fleet workshop staff
- Plant and mining equipment electricians
- Workshop foremen supervising diagnostic work
- Apprentices moving into auto electrical work

Course outline

- 01 Replacing parts until it stops
- 02 Voltage drop, resistance and intermittent circuits
- 03 Reading wiring diagrams
- 04 Batteries, charging and starting
- 05 Earthing and voltage drop testing
- 06 Lighting, switching and relays
- 07 Sensors, actuators and communication networks
- 08 Multimeter and oscilloscope technique, drain and documentation

Upcoming dates



Dates	Venue	Format	Fee per delegate
7 to 9 October 2026	Durban, South Africa	Classroom	R14,950
9 to 11 November 2026	Online	Online	R6,500
25 to 27 November 2026	Maseru, Lesotho	Classroom	R14,950
14 to 16 December 2026	Johannesburg, South Africa	Classroom	R14,950

Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** 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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