



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

Electrical Installation Fault Finding and Repair

Law, Military Science and Security / Safety in Society

Unit Standard 244331 · NQF Level 5 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips electrical practitioners with the systematic skills to identify, diagnose, and rectify faults in electrical installations. Participants will learn to apply safe testing procedures, interpret circuit diagrams, and implement corrective measures in compliance with South African wiring regulations (SANS 10142).

Category	Law, Military Science and Security
Subfield	Safety in Society
Unit Standard	244331
Accreditation	SAQA Accredited · NQF Level 5 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply systematic fault-finding techniques to identify electrical faults in installations.
- Demonstrate safe isolation and testing procedures in accordance with SANS 10142.
- Analyze circuit diagrams and wiring configurations to determine fault causes.
- Evaluate test results to distinguish between component failures and wiring defects.
- Implement corrective repairs using approved methods and materials.
- Complete fault-finding documentation and report findings accurately.

WHO SHOULD ATTEND

- Qualified electricians, electrical contractors, and maintenance technicians who are responsible for fault-finding and repairs in residential, commercial, or industrial electrical installations.

COURSE OUTLINE

Day 1: Introduction to Electrical Principles and Safety

- Basic electrical theory: voltage, current, resistance, power
- Ohm's law and Kirchhoff's laws
- Electrical safety regulations (OHS Act)
- Safe working practices and isolation procedures
- Introduction to test equipment and its safe use

Day 2: Circuit Components and Wiring Diagrams

- Resistors, capacitors, inductors, transformers
- Switches, relays, contactors, circuit breakers
- Reading and interpreting electrical drawings
- Single-line and schematic diagrams
- Wiring colour codes and standards

Day 3: Measuring Instruments and Testing Techniques

- Types of measuring instruments and their applications
- Safe measurement practices
- Measuring AC and DC parameters
- Insulation resistance testing (Megger)
- Earth fault loop impedance testing
- Documenting test results

Day 4: Common Fault Types and Diagnostic Approaches

- Open circuits, short circuits, earth faults
- Intermittent faults and their causes
- Half-split, input-to-output, and substitution methods
- Visual inspection techniques
- Effects of moisture, heat, and vibration

Day 5: Fault Finding in Lighting and Power Circuits

- Lighting circuit configurations (one-way, two-way, intermediate)
- Socket outlet ring and radial circuits
- Identifying reversed polarity and earth faults
- Loose connections and overheating signs
- Repair procedures for common faults

Day 6: Fault Finding in Motor and Control Circuits

- Direct-on-line and star-delta starters
- Contactor and relay coil faults
- Overload relay settings and testing
- Motor winding resistance and insulation tests
- Basic PLC input/output troubleshooting

Day 7: Advanced Fault Finding and Protective Devices

- Multi-circuit fault scenarios
- Circuit breaker and fuse characteristics
- RCD testing and tripping causes

- Earth leakage unit diagnostics
- Introduction to thermal imaging cameras

Day 8: Repair Techniques and Compliance

- Soldering and crimping best practices
- Replacing switches, sockets, and breakers
- Cable jointing and termination
- Compliance with wiring regulations
- Testing after repair

Day 9: Practical Assessment and Course Review

- Simulated fault scenarios for assessment
- Systematic fault diagnosis and repair
- Completion of job cards and reports
- Final knowledge review
- Q&A; and feedback session

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **12 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 35,000.00	R 35,000.00
1	In-House	R 45,500.00	R 45,500.00
1	On-Campus (Pretoria)	R 52,500.00	R 52,500.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	20 Aug 2026	On-Campus	Dubai, UAE
11 Aug 2026	21 Aug 2026	On-Campus	Durban, South Africa
12 Aug 2026	24 Aug 2026	On-Campus	Pretoria, South Africa
12 Aug 2026	24 Aug 2026	On-Campus	Mauritius
14 Aug 2026	26 Aug 2026	On-Campus	Abu Dhabi, UAE
14 Aug 2026	26 Aug 2026	On-Campus	Cape Town, South Africa
17 Aug 2026	27 Aug 2026	On-Campus	Shenzhen, China
17 Aug 2026	27 Aug 2026	On-Campus	Pretoria, South Africa

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 244331) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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