Accredited Africa Training Institute for Capacity Development
Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa
Tel: +27 12 004 8389 · Mobile: +27 65 077 6310
Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Three Phase Industrial Commercial Electrical Installation Testing Inspection Training

Physical Planning and Construction / Electrical Infrastructure Construction

Unit Standard 113894 · NQF Level 4 · 10 Credits · 7 Days

COURSE OVERVIEW

This course equips learners with the skills to safely test and inspect three-phase industrial and commercial electrical installations in compliance with SANS 10142-1 (The Wiring of Premises) and relevant South African regulations. Learners will gain practical competence in conducting pre-commissioning tests, verifying installation integrity, and documenting results. The training ensures adherence to occupational health and safety standards, reducing electrical hazards in workplaces.

Category	Physical Planning and Construction
Subfield	Electrical Infrastructure Construction
Unit Standard	113894
Accreditation	SAQA Accredited · NQF Level 4 · 10 Credits
Duration	7 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply testing procedures to verify the safety and functionality of three-phase electrical installations.
- Analyze test results to identify non-conformances and recommend corrective actions.
- Evaluate installation compliance with SANS 10142-1 and relevant regulations.
- Implement inspection techniques to assess earthing, bonding, and insulation integrity.
- Demonstrate proper use of testing instruments such as insulation testers, earth fault loop impedance testers, and phase rotation meters.
- Document inspection findings and complete required certification reports.

WHO SHOULD ATTEND

- This course is designed for electricians, electrical contractors, maintenance technicians, and inspectors who are responsible for testing and inspecting three-phase electrical installations in industrial and commercial settings.
- It is also suitable for individuals seeking formal recognition of their competence in electrical installation verification.

COURSE OUTLINE

Day 1: Introduction to Three Phase Systems and Regulations

- Overview of three phase power generation and distribution.
- Star and delta configurations.
- Voltage, current, and power relationships in three phase systems.
- Introduction to SANS 10142-1: The wiring of premises.
- Legal requirements for testing and inspection.
- Roles of the electrical contractor, inspector, and user.
- Safety precautions and personal protective equipment (PPE).
- Documentation and reporting requirements.

Day 2: Test Instruments and Measurement Techniques

- Types of test instruments: multimeters, insulation testers, phase rotation meters.
- Calibration and accuracy requirements.
- Measuring line and phase voltages.
- Current measurement using clamp meters.
- Continuity testing of protective conductors.
- Insulation resistance testing: procedure and interpretation.
- Phase rotation and sequence testing.
- Recording and interpreting test results.

Day 3: Inspection of Three Phase Installations

- Visual inspection checklist per SANS 10142-1.
- Inspection of distribution boards: labelling, barriers, and clearances.
- Checking cable sizes and routing.
- Earthing systems: TN, TT, IT configurations.
- Equipotential bonding and supplementary bonding.
- Inspection of protective devices: MCBs, RCDs, fuses.
- Identification of overheating, corrosion, and mechanical damage.
- Documentation of inspection findings.

Day 4: Testing of Protective Devices and Earth Fault Loop Impedance

- RCD testing: trip time and current.
- Types of RCDs and their applications.
- MCB testing: overload and short-circuit characteristics.
- Earth fault loop impedance: theory and measurement.
- PSCC measurement and its significance.
- Testing of three phase circuits.
- Calculation of maximum Z_s values.
- Troubleshooting common issues.

Day 5: Insulation Resistance and Polarity Testing

- Insulation resistance testing of three phase cables and motors.
- Test voltages and minimum acceptable values.
- Testing between phases, phase to earth, and phase to neutral.
- Polarity testing of sockets and switches.
- Phase sequence testing for motors.

- Effects of temperature and humidity on insulation readings.
- Record keeping and certification.
- Case studies of insulation failures.

Day 6: **Functional Testing and Commissioning**

- Functional testing of motor starters and contactors.
- Verification of control circuit voltages.
- Testing of emergency stop and safety interlocks.
- Load testing and performance verification.
- Commissioning procedures for three phase panels.
- Filling in the test report (Annexures).
- Issuing a Certificate of Compliance (CoC).
- Handover documentation and client instruction.

Day 7: **Integration, Troubleshooting, and Assessment**

- Review of all testing and inspection methods.
- Troubleshooting techniques for three phase systems.
- Fault finding in distribution boards and circuits.
- Interpreting complex test results.
- Practical assessment: inspect and test a simulated installation.
- Written assessment on regulations and theory.
- Feedback and course evaluation.
- Certification and next steps.

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 **10 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 28,200.00	**R 28,200.00**
1	In-House	R 36,700.00	**R 36,700.00**
1	On-Campus (Pretoria)	R 42,300.00	**R 42,300.00**

UPCOMING SESSIONS

Start	End	Method	Venue
22 Jun 2026	30 Jun 2026	In-House	—
23 Jun 2026	01 Jul 2026	On-Campus	Maseru, Lesotho
24 Jun 2026	02 Jul 2026	On-Campus	Nairobi, Kenya
25 Jun 2026	03 Jul 2026	On-Campus	Mbabane, Eswatini
26 Jun 2026	06 Jul 2026	On-Campus	Mombasa, Kenya
26 Jun 2026	06 Jul 2026	On-Campus	Windhoek, Namibia
29 Jun 2026	07 Jul 2026	On-Campus	Kigali, Rwanda
29 Jun 2026	07 Jul 2026	On-Campus	Maseru, Lesotho

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 113894) 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.

Accredited Africa Training Institute for Capacity Development
Unit FO409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za