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

Power System Protection

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0508 · NQF Level 5 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips electrical and instrumentation professionals with the knowledge and skills to design, implement, and manage power system protection schemes. Participants will learn to analyze fault conditions, select appropriate protection devices, and coordinate protective systems to ensure safety and reliability of power networks.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0508
Accreditation	SAQA Accredited · NQF Level 5 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply fundamental principles of power system protection to identify fault types and their effects on system components.
- Analyze protection schemes for various power system elements, including feeders, transformers, generators, and motors.
- Evaluate the performance of protective relays and circuit breakers in different fault scenarios.
- Design coordinated protection systems using time-current grading and relay setting calculations.
- Implement protection schemes in compliance with South African and international standards (e.g., IEC, SANS).
- Demonstrate the ability to troubleshoot and maintain protection systems to ensure operational reliability.

WHO SHOULD ATTEND

- This course is designed for electrical engineers, technologists, and technicians involved in the design, operation, and maintenance of power systems, as well as plant managers and maintenance personnel seeking to enhance their understanding of protection principles.

COURSE OUTLINE

Day 1: **Fundamentals of Power System Protection**

- Introduction to power system protection and its role in grid stability.
- Types of faults: symmetrical, unsymmetrical, transient, and permanent.
- Protection system components: relays, circuit breakers, CTs, VTs.
- CT and VT operation, saturation, and accuracy.
- Overcurrent protection principles: time-current characteristics.
- Coordination of overcurrent relays.
- Earth fault protection basics.
- Introduction to relay settings and testing.

Day 2: **Protection Schemes and Relay Coordination**

- Unit vs. non-unit protection.
- Overcurrent protection for feeders and distribution networks.
- Differential protection: principles and applications.
- Transformer differential protection with inrush restraint.
- Busbar protection schemes.
- Distance protection: impedance, mho, and quadrilateral characteristics.
- Relay coordination: time grading, current grading, and CTI.
- Introduction to protection coordination software.

Day 3: **Advanced Protection and System Integration**

- Generator protection: stator, rotor, and prime mover faults.
- Motor protection: overload, stalling, and short-circuit.
- Protection of distributed generation (DG) and microgrids.
- Numerical relays: features, settings, and logic.
- Communication-assisted schemes: transfer trip and blocking.
- Synchrophasors and wide-area protection.
- Substation automation and IEC 61850.
- Protection testing and commissioning.

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 **6 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 13,900.00	**R 13,900.00**
1	In-House	R 18,700.00	**R 18,700.00**
1	On-Campus (Pretoria)	R 20,800.00	**R 20,800.00**

UPCOMING SESSIONS

Start	End	Method	Venue
01 Dec 2026	03 Dec 2026	On-Campus	Victoria Falls, Zimbabwe
01 Dec 2026	03 Dec 2026	On-Campus	Dubai, UAE
02 Dec 2026	04 Dec 2026	On-Campus	Shenzhen, China
02 Dec 2026	04 Dec 2026	On-Campus	Cape Town, South Africa
08 Dec 2026	10 Dec 2026	On-Campus	Maseru, Lesotho
08 Dec 2026	10 Dec 2026	On-Campus	Kigali, Rwanda
08 Dec 2026	10 Dec 2026	On-Campus	Accra, Ghana
08 Dec 2026	10 Dec 2026	On-Campus	Cape Town, South Africa

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

HOW TO GET A QUOTATION OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard AATICD-0508) and click **Get A Quotation**. 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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