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

High Voltage Systems

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0511 · NQF Level 5 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the knowledge and practical skills to work safely with high voltage systems. It covers the principles of high voltage, safety regulations, risk assessment, and emergency response procedures, ensuring compliance with South African health and safety standards.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0511
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 relevant safety regulations and standards to high voltage work environments.
- Analyze the principles of high voltage generation, transmission, and distribution.
- Evaluate risks associated with high voltage systems and implement appropriate control measures.
- Demonstrate safe working procedures for high voltage equipment, including isolation and earthing.
- Design and implement emergency response plans for high voltage incidents.
- Implement maintenance and testing procedures for high voltage systems in accordance with industry best practices.

WHO SHOULD ATTEND

- This course is designed for electricians, electrical engineers, technicians, and maintenance personnel who work with or around high voltage equipment and systems.

COURSE OUTLINE

Day 1: **Fundamentals of High Voltage Systems**

- Introduction to high voltage engineering
- Generation and transmission of high voltage AC and DC
- High voltage equipment: transformers, circuit breakers, insulators, cables
- Insulation materials and dielectric breakdown
- Voltage stress and insulation coordination
- Overview of SANS 1019 and other relevant standards
- Safety regulations: OHS Act, SANS 10280, and safe working distances

Day 2: **Testing, Measurement, and Diagnostics**

- High voltage testing: AC, DC, impulse, and partial discharge tests
- Measurement of high voltage: sphere gaps, dividers, and digital instruments
- Insulation resistance and tan delta measurements
- Partial discharge measurement and analysis
- Diagnostic techniques: DGA, frequency response analysis, and thermal imaging
- Condition-based maintenance strategies
- Safety protocols for high voltage testing

Day 3: **Design, Protection, and Practical Applications**

- Insulation coordination and overvoltage protection
- Surge arresters and protection schemes
- High voltage system design considerations
- HVDC transmission and FACTS devices
- Integration with renewable energy sources
- Risk assessment and safety management for high voltage installations
- Case studies and failure analysis

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-0511) 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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