



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@aatikd.co.za · Website: www.aatikd.co.za

COURSE BROCHURE

Battery Storage System Design

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0495 · NQF Level 5 · 4 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to design efficient and safe battery storage systems for residential, commercial, and utility-scale applications. It covers system architecture, component selection, safety standards, and performance optimization, enabling learners to produce compliant and cost-effective designs.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0495
Accreditation	SAQA Accredited · NQF Level 5 · 4 Credits
Duration	2 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply fundamental principles of battery chemistry and operation to select appropriate battery technologies for specific applications.
- Analyze load profiles and energy requirements to size battery storage capacity and power ratings accurately.
- Design battery storage system architectures, including series/parallel configurations, BMS integration, and protection devices.
- Evaluate safety standards and regulatory requirements to ensure designs meet South African and international codes.
- Implement thermal management and ventilation strategies to maintain battery performance and longevity.
- Demonstrate economic and environmental benefits of proposed designs through lifecycle cost and carbon footprint analysis.

WHO SHOULD ATTEND

- This course is ideal for electrical engineers, renewable energy technicians, project managers, and technical sales professionals involved in the design, installation, or maintenance of battery energy storage systems.

COURSE OUTLINE

Day 1: Fundamentals of Battery Storage Systems

- Introduction to battery energy storage systems (BESS)
- Battery chemistries: lead-acid, lithium-ion, flow batteries, and emerging technologies
- Electrical parameters: voltage, current, capacity, state of charge (SoC), depth of discharge (DoD)
- Performance metrics: round-trip efficiency, cycle life, degradation
- Safety standards and regulations (SANS, IEC)
- System components: BMS, inverters, thermal management, enclosures
- Site assessment and system sizing fundamentals

Day 2: Design, Integration, and Practical Applications

- System design methodology: load analysis, solar yield, battery sizing
- Applications: peak shaving, load shifting, backup power, grid services
- Integration with PV systems and grid connection requirements
- Protection and control strategies
- Economic analysis: cost-benefit, payback, ROI
- Environmental impact and recycling
- Commissioning, monitoring, and maintenance planning

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 **4 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 11,900.00	R 11,900.00
1	In-House	R 15,400.00	R 15,400.00
1	On-Campus (Pretoria)	R 17,800.00	R 17,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
01 Oct 2026	02 Oct 2026	On-Campus	Maseru, Lesotho
01 Oct 2026	02 Oct 2026	On-Campus	Victoria Falls, Zimbabwe
05 Oct 2026	06 Oct 2026	On-Campus	Mbabane, Eswatini
05 Oct 2026	06 Oct 2026	On-Campus	Lusaka, Zambia
06 Oct 2026	07 Oct 2026	On-Campus	Nairobi, Kenya
06 Oct 2026	07 Oct 2026	On-Campus	Bangkok, Thailand
07 Oct 2026	08 Oct 2026	On-Campus	Windhoek, Namibia
08 Oct 2026	09 Oct 2026	On-Campus	Kigali, Rwanda

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 AATICD-0495) 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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