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

Solar PV Design and Installation

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0479 · NQF Level 5 · 4 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with the comprehensive skills and knowledge required to design and install photovoltaic (PV) systems for residential, commercial, and utility-scale applications. It covers the principles of solar energy, system components, site assessment, system sizing, installation practices, and safety protocols, ensuring compliance with South African standards and regulations.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0479
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 the principles of solar radiation and PV technology to design efficient photovoltaic systems.
- Analyze site conditions and load requirements to determine optimal system configuration and sizing.
- Design grid-tied, off-grid, and hybrid PV systems, selecting appropriate components and ensuring compliance with relevant standards.
- Implement safe and professional installation practices, including mounting, wiring, and commissioning of PV systems.
- Evaluate system performance and troubleshoot common issues to ensure optimal operation and maintenance.
- Demonstrate adherence to occupational health and safety regulations and environmental best practices during installation.

WHO SHOULD ATTEND

- This course is designed for aspiring solar technicians, electricians, engineers, and entrepreneurs seeking to enter the renewable energy sector.
- It is also suitable for professionals in the construction and electrical industries who wish to expand their expertise into solar PV installations.

COURSE OUTLINE

Day 1: **Solar PV Fundamentals and System Design**

- Introduction to solar PV: how PV cells work, types of technologies (mono, poly, thin-film).
- Components of a PV system: modules, inverters, mounting structures, cables, protection devices.
- Site assessment: solar irradiance, orientation, tilt, shading analysis, and load profile.
- System design principles: series and parallel configurations, voltage and current calculations.
- Sizing of PV array and inverter for grid-tied systems.
- Regulatory framework in South Africa: SANS standards, municipal requirements, and grid connection.
- Safety: electrical safety, working at heights, and PPE.
- Introduction to system performance modeling and software tools.

Day 2: **Installation, Commissioning, and Maintenance**

- Installation planning: permits, tools, and materials.
- Mechanical installation: mounting structures, module fixing, and cable management.
- Electrical installation: DC and AC wiring, earthing, and overcurrent protection.
- Inverter installation and connection to the grid.
- Commissioning: visual inspection, insulation testing, and functional testing.
- Performance verification: using IV curve tracers and data logging.
- Troubleshooting common issues: shading, soiling, inverter faults, and wiring problems.
- Maintenance: cleaning, thermal scanning, and periodic inspections.
- Documentation: as-built drawings, test results, and operation & maintenance manuals.

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 16,100.00	**R 16,100.00**
1	On-Campus (Pretoria)	R 17,800.00	**R 17,800.00**

UPCOMING SESSIONS

Start	End	Method	Venue
02 Dec 2026	03 Dec 2026	On-Campus	Dubai, UAE
03 Dec 2026	04 Dec 2026	On-Campus	Victoria Falls, Zimbabwe
03 Dec 2026	04 Dec 2026	On-Campus	Cape Town, South Africa
10 Dec 2026	11 Dec 2026	On-Campus	Maseru, Lesotho
10 Dec 2026	11 Dec 2026	On-Campus	Kigali, Rwanda
10 Dec 2026	11 Dec 2026	On-Campus	Accra, Ghana
10 Dec 2026	11 Dec 2026	On-Campus	Cape Town, South Africa
10 Dec 2026	11 Dec 2026	On-Campus	Abu Dhabi, UAE

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-0479) 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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