



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

DC Power Supply Construction Techniques

Physical, Mathematical, Computer and Life Sciences / Information Technology and Computer Sciences

Unit Standard 259169 · NQF Level 5 · 5 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with the practical skills and theoretical knowledge required to construct DC power supplies. Participants will learn to design, assemble, and test power supply circuits using standard components, ensuring they meet industry specifications. The course emphasizes safety, troubleshooting, and adherence to South African standards.

Category	Physical, Mathematical, Computer and Life Sciences
Subfield	Information Technology and Computer Sciences
Unit Standard	259169
Accreditation	SAQA Accredited · NQF Level 5 · 5 Credits
Duration	2 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Interpret circuit diagrams and specifications for DC power supplies.
- Select appropriate components such as transformers, rectifiers, and regulators.
- Assemble DC power supply circuits on prototyping boards or PCBs.
- Test and measure output voltage, current, and ripple using multimeters and oscilloscopes.
- Troubleshoot common faults in DC power supply circuits.
- Apply safety procedures when working with electrical circuits.

WHO SHOULD ATTEND

- This course is ideal for electronics technicians, engineers, and hobbyists who need to build or maintain DC power supplies.
- It is also suitable for students pursuing qualifications in electrical or electronic engineering.

COURSE OUTLINE

Day 1: Fundamentals of DC Power Supply Design

- Overview of DC power supply types: linear vs. switching
- Block diagram: transformer, rectifier, filter, regulator
- Transformer selection: voltage, current, and isolation
- Rectifier circuits: half-wave, full-wave, bridge
- Filtering: capacitor input, LC filters, ripple reduction
- Voltage regulation: Zener diodes, linear regulators (78xx, LM317)
- Heat dissipation and thermal management basics
- Safety: fusing, earthing, isolation, and component handling

Day 2: Construction, Testing, and Practical Integration

- Component selection: capacitors, diodes, regulators, heatsinks
- PCB layout considerations: ground loops, thermal management
- Soldering techniques for power components
- Testing with multimeter and oscilloscope: voltage, ripple, regulation
- Load testing and efficiency measurement
- Fault-finding: open circuits, short circuits, component failure
- Adding protection: fuses, reverse polarity, overvoltage
- Final assembly and enclosure considerations

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 **5 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

No sessions are currently scheduled. Please contact us to arrange a session at a time and location that suits your team.

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 259169) 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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