



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

Electronic Systems Operation and Application

Law, Military Science and Security / Safety in Society

Unit Standard 257283 · NQF Level 5 · 9 Credits · 6 Days

COURSE OVERVIEW

This course equips learners with the knowledge and practical skills to operate and apply electronic systems effectively in a workplace environment. Learners will gain an understanding of electronic system components, their functions, and how to troubleshoot common issues. The course ensures competence in using electronic systems to enhance productivity and safety.

Category	Law, Military Science and Security
Subfield	Safety in Society
Unit Standard	257283
Accreditation	SAQA Accredited · NQF Level 5 · 9 Credits
Duration	6 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate understanding of the basic principles of electronic systems and their components.
- Apply safety procedures when working with electronic systems.
- Operate electronic systems according to manufacturer specifications and workplace protocols.
- Analyze common faults in electronic systems and perform basic troubleshooting.
- Demonstrate the use of electronic measuring instruments to test system performance.
- Interpret technical documentation and diagrams related to electronic systems.

WHO SHOULD ATTEND

- This course is ideal for technicians, operators, and professionals who work with or manage electronic systems in industrial, commercial, or service settings.
- It is suitable for individuals seeking to formalize their practical experience with electronic systems.

COURSE OUTLINE

Day 1: Introduction to Electronic Systems

- Overview of electronic systems in industry.
- Basic electronic components: resistors, capacitors, diodes, transistors.
- Circuit theory: voltage, current, resistance, Ohm's Law.
- Signal types: analog vs digital signals.

Day 2: Power Supplies and Regulation

- AC to DC conversion: rectifiers (half-wave, full-wave).
- Filtering circuits: capacitors, inductors.
- Voltage regulators: linear and switching regulators.
- Power supply protection: fuses, circuit breakers.

Day 3: Amplifiers and Signal Processing

- Amplifier basics: gain, bandwidth, classes (A, B, AB, C).
- Operational amplifiers: inverting, non-inverting, summing amplifiers.
- Active filters: low-pass, high-pass, band-pass.
- Signal conditioning: amplification, attenuation, isolation.

Day 4: Digital Electronics and Logic Circuits

- Binary, hexadecimal, and BCD number systems.
- Logic gates: AND, OR, NOT, NAND, NOR, XOR.
- Combinational logic: adders, multiplexers, decoders.
- Sequential logic: flip-flops, counters, shift registers.

Day 5: Sensors, Actuators, and Interfacing

- Sensors: temperature, pressure, proximity, light.
- Actuators: relays, solenoids, motors.
- Interfacing: analog-to-digital converters (ADC), digital-to-analog converters (DAC).
- Signal conditioning: amplification, filtering, linearization.

Day 6: System Integration and Troubleshooting

- System integration: combining power supply, processing, and I/O.
- Troubleshooting methodology: visual inspection, measurement, isolation.
- Use of test equipment: multimeter, oscilloscope, logic analyzer.
- Safety practices: lockout/tagout, ESD precautions.

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 **9 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 26,900.00	R 26,900.00
1	In-House	R 35,000.00	R 35,000.00
1	On-Campus (Pretoria)	R 40,300.00	R 40,300.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	17 Aug 2026	On-Campus	Cape Town, South Africa
11 Aug 2026	18 Aug 2026	On-Campus	Dubai, UAE
12 Aug 2026	19 Aug 2026	On-Campus	Pretoria, South Africa
13 Aug 2026	20 Aug 2026	On-Campus	Abu Dhabi, UAE
14 Aug 2026	21 Aug 2026	On-Campus	Durban, South Africa
14 Aug 2026	21 Aug 2026	On-Campus	Mauritius
17 Aug 2026	24 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	24 Aug 2026	On-Campus	Dubai, UAE

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 257283) 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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