



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

Programmable Logic Controller Plc Troubleshooting Skills Training

Physical Planning and Construction / Electrical Infrastructure Construction

Unit Standard 113897 · NQF Level 4 · 5 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with the skills to systematically troubleshoot Programmable Logic Controllers (PLCs) in industrial settings. Participants will learn to diagnose hardware and software faults, interpret diagnostic indicators, and apply corrective actions to minimise downtime. The training ensures competence in maintaining PLC-based automation systems according to industry standards.

Category	Physical Planning and Construction
Subfield	Electrical Infrastructure Construction
Unit Standard	113897
Accreditation	SAQA Accredited · NQF Level 4 · 5 Credits
Duration	2 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply systematic fault-finding techniques to identify PLC hardware and software malfunctions.
- Analyze PLC program logic and ladder diagrams to isolate operational issues.
- Evaluate diagnostic data from PLC status indicators and software tools to determine root causes.
- Demonstrate correct use of multimeters, oscilloscopes, and PLC programming software during troubleshooting.
- Implement corrective actions such as component replacement, program modifications, and parameter adjustments.
- Document troubleshooting procedures and outcomes for maintenance records and continuous improvement.

WHO SHOULD ATTEND

- This course is designed for electrical and instrumentation technicians, maintenance engineers, and automation specialists who are responsible for PLC troubleshooting and maintenance in manufacturing, processing, or utilities environments.

COURSE OUTLINE

Day 1: Fundamentals of PLC Troubleshooting

- Overview of PLC hardware: CPU, power supply, I/O modules, communication ports
- PLC operation cycles: scan cycle, input scan, program execution, output scan
- Common fault types: power issues, I/O failures, communication errors, program corruption
- Safety procedures: lockout/tagout, electrical safety, proper use of multimeters
- Systematic troubleshooting methodology: observe, define, isolate, test, resolve
- Using LED indicators and fault logs for initial diagnostics
- Introduction to programming software for monitoring and forcing I/O

Day 2: Advanced Diagnostics and Practical Application

- Online monitoring: forcing I/O, watching values, setting breakpoints
- Analog signal troubleshooting: scaling, 4-20mA loops, sensor calibration
- Communication network faults: DeviceNet, Profibus, Ethernet/IP
- Advanced instructions: timers, counters, compare, math instructions
- Data table and file handling for diagnostics
- Creating a troubleshooting flowchart and documentation
- Case studies: common PLC failures in manufacturing and process control

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 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 15,400.00	R 15,400.00
1	In-House	R 20,000.00	R 20,000.00
1	On-Campus (Pretoria)	R 23,100.00	R 23,100.00

UPCOMING SESSIONS

Start	End	Method	Venue
11 Aug 2026	12 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	12 Aug 2026	On-Campus	Dubai, UAE
11 Aug 2026	12 Aug 2026	On-Campus	Mauritius
13 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
13 Aug 2026	14 Aug 2026	On-Campus	Pretoria, South Africa
13 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
17 Aug 2026	18 Aug 2026	On-Campus	Pretoria, South Africa
17 Aug 2026	18 Aug 2026	On-Campus	Durban, South Africa

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 113897) 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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