



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

Basic Programmable Logic Controllers Plc Fundamentals Training

Manufacturing, Engineering and Technology / Engineering and Related Design

Unit Standard 113899 · NQF Level 3 · 6 Credits · 3 Days

COURSE OVERVIEW

This course provides foundational knowledge and practical skills for understanding, programming, and troubleshooting basic Programmable Logic Controllers (PLCs). Participants will learn to interpret ladder logic diagrams, configure PLC hardware, and implement simple control programs, enabling them to contribute effectively to industrial automation and process control systems.

Category	Manufacturing, Engineering and Technology
Subfield	Engineering and Related Design
Unit Standard	113899
Accreditation	SAQA Accredited · NQF Level 3 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate the ability to identify and describe the basic components and architecture of a PLC system.
- Apply ladder logic programming techniques to design simple control circuits.
- Implement basic PLC programs using programming software and test them on a simulated or real PLC.
- Analyze and troubleshoot common PLC input/output and program errors.
- Evaluate the safety considerations and best practices for working with PLCs in an industrial environment.
- Design a simple PLC-based control solution for a given process or machine sequence.

WHO SHOULD ATTEND

- This course is ideal for technicians, electricians, and engineers who are new to PLCs or require a solid foundation in PLC fundamentals for their roles in manufacturing, process control, or industrial maintenance.

COURSE OUTLINE

Day 1: Introduction to PLCs and Hardware Fundamentals

- What is a PLC? History and applications
- PLC architecture: CPU, memory, I/O, power supply
- Numbering systems: binary, decimal, hexadecimal
- Digital logic gates: AND, OR, NOT, NAND, NOR
- Overview of input devices: sensors, switches
- Overview of output devices: relays, actuators
- Introduction to PLC programming languages (Ladder Logic basics)

Day 2: Programming Basics and Ladder Logic

- Ladder logic symbols: contacts, coils, branches
- Normally open and normally closed contacts
- Timers: ON-delay, OFF-delay, retentive
- Counters: up, down, up/down
- Basic program structures: seal-in, interlocking, latching
- Introduction to PLC simulation software
- Troubleshooting common programming errors

Day 3: Advanced Functions and System Integration

- Comparator instructions: equal, greater than, less than
- Arithmetic instructions: add, subtract, multiply, divide
- Subroutines and program organisation
- Introduction to Human-Machine Interface (HMI)
- Analog I/O and scaling concepts
- Safety considerations and emergency stop circuits
- Practical troubleshooting techniques

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 **6 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 17,900.00	R 17,900.00
1	In-House	R 23,300.00	R 23,300.00
1	On-Campus (Pretoria)	R 26,800.00	R 26,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	05 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	05 Aug 2026	On-Campus	Mauritius
04 Aug 2026	06 Aug 2026	On-Campus	Cape Town, South Africa
04 Aug 2026	06 Aug 2026	On-Campus	Lagos, Nigeria
05 Aug 2026	07 Aug 2026	On-Campus	Dubai, UAE
05 Aug 2026	07 Aug 2026	On-Campus	Johannesburg, South Africa
10 Aug 2026	12 Aug 2026	On-Campus	Abu Dhabi, UAE
10 Aug 2026	12 Aug 2026	On-Campus	Cape Town, 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 113899) 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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