



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

PLC and SCADA in Electrical, Water and Wastewater, Manufacturing and Processing

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 12258 · NQF Level 2 · 7 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with the knowledge to identify and understand computerised systems commonly used in manufacturing and processing environments. Participants will gain insight into how these systems enhance efficiency, quality control, and data management within industrial operations.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	12258
Accreditation	SAQA Accredited · NQF Level 2 · 7 Credits
Duration	5 days
Training Method	On-Campus
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Identify various types of computerised systems used in manufacturing and processing environments.
- Explain the purpose and functionality of computerised systems in production processes.
- Demonstrate how computerised systems contribute to quality control and data management.
- Apply basic troubleshooting techniques for common system issues.
- Evaluate the impact of computerised systems on operational efficiency.
- Comply with relevant safety and data integrity protocols when using computerised systems.

WHO SHOULD ATTEND

- This course is designed for operators, technicians, and supervisors in manufacturing or processing industries who need to understand the role of computerised systems in their work environment.

COURSE OUTLINE

Day 1: Fundamentals of PLC and SCADA Systems

- Introduction to automation in electrical, water, wastewater, manufacturing, and processing industries
- Overview of PLCs: history, types, and applications
- PLC hardware: CPU, I/O modules, power supply, and communication interfaces
- Introduction to SCADA: components, HMI, RTU, and master station
- Communication protocols: Modbus, Profibus, and OPC
- Safety and standards in automation

Day 2: PLC Programming and Configuration

- Ladder logic programming basics: contacts, coils, branches
- I/O addressing and mapping
- Timers (TON, TOF) and counters (CTU, CTD)
- Comparison and arithmetic instructions
- Program organization: main routine, subroutines
- Hands-on: programming a simple process control sequence

Day 3: SCADA System Design and HMI Development

- HMI design principles: navigation, graphics, and user interface
- Tag database creation and data binding
- Alarm management and logging
- Trend curves and historical data visualization
- Communication setup: PLC to SCADA (e.g., via Modbus TCP)
- Practical: building an HMI for a water pumping station

Day 4: Advanced Applications and Integration

- PID control: tuning and implementation in PLC
- Networked automation: multiple PLCs and SCADA integration
- Data logging and reporting for compliance
- Cybersecurity basics: network segmentation, access control
- Case studies: water treatment, manufacturing line, wastewater plant

Day 5: Troubleshooting, Maintenance, and Project Work

- Fault-finding techniques: using diagnostic tools and software
- Preventive maintenance of PLC and SCADA components
- Project: design, program, and simulate a small automation system
- Documentation: system diagrams, user manuals, and maintenance logs
- Final assessment and Q&A;

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 **7 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 23,000.00	R 23,000.00
1	In-House	R 29,900.00	R 29,900.00
1	On-Campus (Pretoria)	R 34,500.00	R 34,500.00

UPCOMING SESSIONS

Start	End	Method	Venue
07 Sep 2026	11 Sep 2026	Online	—
14 Sep 2026	18 Sep 2026	In-House	—
21 Sep 2026	25 Sep 2026	On-Campus	Windhoek, Namibia
28 Sep 2026	02 Oct 2026	Online	—
05 Oct 2026	09 Oct 2026	In-House	—
12 Oct 2026	16 Oct 2026	On-Campus	Windhoek, Namibia
19 Oct 2026	23 Oct 2026	Online	—
26 Oct 2026	30 Oct 2026	In-House	—

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 12258) 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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