



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

Pneumatics Systems

Custom Courses / Hydraulics, Pneumatics & Fluid Power

Unit Standard AATICD-0223 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course provides a comprehensive understanding of pneumatic systems, including their components, operation, and maintenance. Participants will gain practical skills in designing, troubleshooting, and optimising pneumatic circuits for industrial applications. The course ensures competence in applying pneumatic principles to enhance productivity and safety in automated environments.

Category	Custom Courses
Subfield	Hydraulics, Pneumatics & Fluid Power
Unit Standard	AATICD-0223
Accreditation	SAQA Accredited · NQF Level 5 · 10 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate an understanding of the principles of pneumatics and the function of system components.
- Apply safety procedures and best practices when working with pneumatic systems.
- Design and assemble basic pneumatic circuits using schematic diagrams.
- Analyse and troubleshoot common faults in pneumatic systems.
- Evaluate the performance of pneumatic components and systems for efficiency.
- Implement preventive maintenance schedules for pneumatic equipment.

WHO SHOULD ATTEND

- This course is designed for technicians, engineers, and maintenance personnel involved in the installation, operation, and maintenance of pneumatic systems.
- It is also suitable for individuals seeking to upskill in industrial automation and fluid power technology.

COURSE OUTLINE

Day 1: Introduction to Pneumatics and Basic Principles

- Definition and history of pneumatics.
- Advantages and disadvantages of pneumatic systems.
- Properties of compressed air (pressure, flow, volume).
- Basic pneumatic circuit components: compressors, filters, regulators, lubricators.
- Safety rules and personal protective equipment (PPE).

Day 2: Pneumatic Actuators and Valves

- Linear actuators: single-acting and double-acting cylinders.
- Rotary actuators: vane motors and piston motors.
- Directional control valves: 2/2, 3/2, 4/2, and 5/2 ways.
- Valve actuation methods: manual, mechanical, pneumatic, electric.
- Flow control valves and pressure control valves.
- Graphical symbols and circuit diagrams.

Day 3: Pneumatic Circuit Design and Simulation

- Circuit design principles: logic functions (AND, OR, NOT).
- Sequencing circuits (cascade method).
- Use of shuttle valves and quick exhaust valves.
- Drawing circuit diagrams using ISO symbols.
- Introduction to simulation software (e.g., FluidSIM).

Day 4: Maintenance, Fault-Finding, and Safety

- Maintenance schedules: filter cleaning, lubrication, drainage.
- Fault-finding techniques: systematic approach.
- Common faults: leaks, blockages, valve sticking.
- Air quality: moisture, contamination, and filtration.
- Lockout/tagout procedures.
- Risk assessment and hazard identification.

Day 5: Advanced Applications and System Integration

- Electro-pneumatics: solenoid valves, relays, sensors.
- PLC programming for pneumatic sequences.
- Energy efficiency: reducing air leaks, proper sizing.
- Case studies: pick-and-place, conveyor systems.
- Final assessment: design, build, and test a complete circuit.

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 **10 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 24,200.00	R 24,200.00
1	In-House	R 31,400.00	R 31,400.00
1	On-Campus (Pretoria)	R 36,200.00	R 36,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	21 Aug 2026	On-Campus	Shenzhen, China
24 Aug 2026	28 Aug 2026	On-Campus	Bangkok, Thailand
24 Aug 2026	28 Aug 2026	On-Campus	Victoria Falls, Zimbabwe
31 Aug 2026	04 Sep 2026	On-Campus	Lusaka, Zambia
31 Aug 2026	04 Sep 2026	On-Campus	London, UK

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 AATICD-0223) 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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