



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

Fluid Power Technology

Custom Courses / Hydraulics, Pneumatics & Fluid Power

Unit Standard AATICD-0224 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with a comprehensive understanding of fluid power technology, including hydraulic and pneumatic systems. It covers system design, operation, maintenance, and safety, enabling participants to apply fluid power principles effectively in industrial settings. The training aligns with industry standards to enhance productivity and reliability.

Category	Custom Courses
Subfield	Hydraulics, Pneumatics & Fluid Power
Unit Standard	AATICD-0224
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

- Apply fundamental principles of fluid power, including Pascal's law and Bernoulli's principle, to system analysis.
- Analyze hydraulic and pneumatic circuits using schematic diagrams and identify component functions.
- Evaluate system performance and troubleshoot common faults in fluid power systems.
- Design basic hydraulic and pneumatic circuits for given industrial applications.
- Implement safety procedures and maintenance schedules for fluid power equipment.
- Demonstrate proper selection of fluids, seals, and filters for system efficiency.

WHO SHOULD ATTEND

- This course is ideal for mechanical and industrial engineers, technicians, and maintenance personnel who work with or aspire to work with fluid power systems in manufacturing, mining, or automotive industries.

COURSE OUTLINE

Day 1: Introduction to Fluid Power Systems

- Overview of fluid power technology and its industrial importance.
- Basic principles: Pascal's law, pressure, flow, and force.
- Comparison of hydraulic and pneumatic systems.
- Common applications in manufacturing, mining, and agriculture.
- Safety standards and hazard awareness.
- Introduction to system schematics and symbols.

Day 2: Hydraulic System Components and Operation

- Hydraulic pumps: gear, vane, piston types.
- Control valves: directional, pressure, flow control.
- Actuators: cylinders and motors.
- Reservoirs, filters, and accumulators.
- Reading and drawing hydraulic circuit diagrams.
- Basic calculations: pressure drop, flow velocity, power.
- Common faults and troubleshooting approaches.

Day 3: Pneumatic System Components and Operation

- Air compressors and air treatment: filters, regulators, lubricators.
- Pneumatic valves: directional, flow control, logic.
- Pneumatic actuators: cylinders, rotary actuators.
- Pneumatic circuit design and simulation.
- Electro-pneumatic control principles.
- Energy efficiency and maintenance practices.
- Safety in pneumatic systems.

Day 4: System Troubleshooting and Maintenance

- Systematic troubleshooting methodology.
- Common hydraulic faults: leakage, cavitation, overheating.
- Common pneumatic faults: moisture, pressure drops, contamination.
- Diagnostic instruments and their use.
- Preventive maintenance schedules.
- Component replacement and repair techniques.
- Record-keeping and documentation.

Day 5: System Design and Integration

- Design process: requirement analysis, component selection.
- Circuit design for sequential and simultaneous operations.
- Integration of electro-hydraulic and electro-pneumatic controls.
- Performance evaluation: pressure, flow, cycle time.
- Cost considerations and component sizing.
- Industry standards (ISO, SANS) and safety regulations.
- Final project: design and present a fluid power system.

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-0224) 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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