



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

Hydraulic Systems Maintenance

Custom Courses / Hydraulics, Pneumatics & Fluid Power

Unit Standard AATICD-0221 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to perform maintenance on hydraulic systems safely and effectively. It covers the principles of hydraulic power transmission, system components, diagnostic procedures, and maintenance practices in compliance with South African health and safety regulations.

Category	Custom Courses
Subfield	Hydraulics, Pneumatics & Fluid Power
Unit Standard	AATICD-0221
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

- Explain the fundamental principles of hydraulic power transmission and the function of system components.
- Identify and interpret hydraulic system schematics and symbols.
- Implement safe work procedures and comply with relevant health and safety legislation when maintaining hydraulic systems.
- Diagnose common faults in hydraulic systems using systematic troubleshooting techniques.
- Perform routine maintenance tasks such as fluid checks, filter replacement, and seal inspection.
- Demonstrate proper procedures for system pressure testing and adjustment.

WHO SHOULD ATTEND

- Technicians, maintenance personnel, and engineers responsible for the installation, operation, and maintenance of hydraulic systems in industrial or mobile equipment settings.

COURSE OUTLINE

Day 1: Introduction to Hydraulic Systems

- Definition and advantages of hydraulic systems
- Pascal's law and basic physics
- Overview of hydraulic system components: pumps, valves, actuators, reservoirs
- Types of hydraulic fluids and their characteristics
- Safety precautions and personal protective equipment
- Introduction to hydraulic schematics and symbols

Day 2: Hydraulic Pumps and Actuators

- Gear, vane, and piston pumps: construction and operation
- Pump performance curves and selection criteria
- Hydraulic cylinders: single-acting, double-acting, telescopic
- Hydraulic motors: fixed and variable displacement
- Mounting and alignment considerations
- Inspection procedures for pumps and actuators

Day 3: Control Valves and System Circuits

- Directional control valves: spool, poppet, check valves
- Pressure control valves: relief, reducing, sequence, unloading
- Flow control valves: fixed, variable, pressure-compensated
- Basic hydraulic circuits: regenerative, counterbalance, pilot-operated
- Troubleshooting valve-related issues
- Circuit diagram reading and analysis

Day 4: Maintenance, Filtration, and Contamination Control

- Contamination types: particulate, water, air, chemical
- Filtration methods: full-flow, bypass, offline, breathers
- Oil sampling procedures and ISO cleanliness codes
- Routine maintenance schedules: filter changes, fluid top-ups, seal inspections
- Troubleshooting common faults: overheating, noise, leakage
- Proper storage and handling of hydraulic fluids

Day 5: System Diagnostics, Repair, and Safety Compliance

- Diagnostic tools: pressure gauges, flow meters, thermometers, data loggers
- Step-by-step troubleshooting methodology
- Component removal and installation best practices
- System flushing and commissioning after repair
- Lockout/tagout and safe isolation procedures
- Maintenance record-keeping and reporting

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-0221) 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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