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

Flow Equipment Fault Finding And Repair Training

Manufacturing, Engineering and Technology / Engineering and Related Design

Unit Standard 116082 · NQF Level 4 · 10 Credits · 7 Days

COURSE OVERVIEW

This course equips learners with the skills to diagnose, troubleshoot, and repair faults in flow equipment used in industrial and commercial settings. Participants will gain hands-on experience in identifying common failures, performing corrective maintenance, and ensuring equipment reliability to minimise downtime.

Category	Manufacturing, Engineering and Technology
Subfield	Engineering and Related Design
Unit Standard	116082
Accreditation	SAQA Accredited · NQF Level 4 · 10 Credits
Duration	7 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply systematic fault-finding techniques to diagnose flow equipment malfunctions.
- Analyze operational data and performance indicators to identify root causes of equipment failure.
- Evaluate repair options and select appropriate methods based on equipment type and fault severity.
- Implement corrective maintenance procedures for pumps, valves, and flow meters.
- Demonstrate safe isolation and lockout/tagout procedures before commencing repair work.
- Document fault-finding processes and repair outcomes for quality assurance and future reference.

WHO SHOULD ATTEND

- This course is designed for maintenance technicians, millwrights, and engineers responsible for the operation and repair of pumps, valves, and piping systems in industries such as water treatment, petrochemical, and manufacturing.

COURSE OUTLINE

Day 1: Introduction to Flow Equipment and Safety

- Overview of flow equipment in SA industry
- Types of pumps: centrifugal, positive displacement
- Types of valves: gate, globe, ball, butterfly
- Introduction to compressors and blowers
- Fluid properties: pressure, flow rate, viscosity
- Safety protocols: lockout/tagout, PPE, hazard identification
- Relevant SA legislation: OHS Act, SANS standards

Day 2: Fault Finding Principles and Diagnostic Techniques

- Systematic fault-finding process: observe, analyse, isolate, correct
- Diagnostic tools and their applications
- Reading P&IDs; and equipment schematics
- Common failure modes: cavitation, wear, misalignment, leakage
- Case studies on pump and valve failures
- Introduction to condition monitoring (vibration, temperature

Day 3: Mechanical and Electrical Components

- Mechanical seals: types, installation, failure causes
- Bearings: types, lubrication, failure analysis
- Impellers and volutes: wear patterns and clearance
- Electric motors: types, wiring, protection devices
- Variable speed drives (VSDs): principles and troubleshooting
- Measuring insulation resistance and continuity
- Common electrical faults: phase imbalance, overload, short circuit

Day 4: Pump Fault Finding and Repair

- Centrifugal pump troubleshooting: cavitation, air binding, reverse rotation
- Positive displacement pump troubleshooting: slip, relief valve issues
- Step-by-step pump disassembly procedure
- Inspection of wear rings, shaft sleeves, and mechanical seals
- Seal replacement techniques
- Bearing replacement and alignment
- Pump reassembly and alignment (coupling, baseplate
- Performance testing: flow, head, power consumption

Day 5: Valve Fault Finding and Repair

- Valve types and applications: isolation, control, check, safety
- Common valve faults: seat leakage, stem seal leakage, actuator failure
- Valve disassembly: gate, globe, ball, butterfly valves
- Seat and disc refurbishment techniques (lapping, replacement
- Packing and gasket replacement
- Actuator troubleshooting: pneumatic, electric, hydraulic
- Valve testing: hydrostatic, seat leakage, operational cycle test

Day 6: Compressor and Blower Fault Finding and Repair

- Compressor types: reciprocating, rotary screw, centrifugal
- Common faults: valve failure, ring wear, oil carryover, overheating
- Reciprocating compressor: valve plate inspection, piston ring replacement
- Rotary screw compressor: rotor clearance, oil system troubleshooting
- Blower maintenance: belt tension, bearing replacement
- Safety devices: pressure relief valves, temperature switches
- Performance testing: capacity, pressure, power consumption

Day 7: **System Integration, Commissioning, and Reporting**

- System approach: interaction of pumps, valves, compressors in a circuit
- Commissioning procedures: start-up, parameter checks, safety interlocks
- Performance verification against specifications
- Maintenance reporting: fault logs, repair actions, parts used
- Continuous improvement: root cause analysis and preventive maintenance
- Final assessment: practical fault-finding and repair scenario
- Course review 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 **10 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 28,200.00	**R 28,200.00**
1	In-House	R 36,700.00	**R 36,700.00**
1	On-Campus (Pretoria)	R 42,300.00	**R 42,300.00**

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	12 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	13 Aug 2026	On-Campus	Mauritius
06 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	17 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	18 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	19 Aug 2026	On-Campus	Durban, South Africa
11 Aug 2026	19 Aug 2026	On-Campus	Mauritius
12 Aug 2026	20 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 116082) 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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