



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

Wastewater Pump Station Operation And Maintenance Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 115955 · NQF Level 3 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to operate and maintain wastewater pump stations efficiently and safely. It covers pump station components, operational procedures, troubleshooting, and preventive maintenance to ensure compliance with South African regulations and standards.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	115955
Accreditation	SAQA Accredited · NQF Level 3 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate the ability to start up, operate, and shut down wastewater pump stations according to standard operating procedures.
- Apply preventive maintenance techniques to pumps, motors, valves, and control systems to minimize downtime.
- Analyze common pump station faults and troubleshoot issues such as blockages, cavitation, and electrical failures.
- Evaluate safety risks and implement appropriate control measures in accordance with OHS Act and site-specific protocols.
- Interpret pump station performance data and record operational parameters for reporting and maintenance planning.

WHO SHOULD ATTEND

- This course is designed for pump station operators, maintenance technicians, and supervisors working in municipal or industrial wastewater management.
- It is also suitable for new entrants seeking foundational skills in wastewater pump station operations.

COURSE OUTLINE

Day 1: Introduction to Wastewater Pump Stations

- Overview of wastewater management systems.
- SAQA Unit Standard 115955 and relevant regulations (e.g., Water Services Act).
- Types of pump stations (wet well/dry well, submersible).
- Primary components: pumps, motors, valves, piping, wet wells, control panels.
- Health, safety, and environmental considerations.
- Introduction to standard operating procedures (SOPs).

Day 2: Pump Station Hydraulics and Pump Principles

- Fluid properties and basic hydraulics (head, flow, pressure).
- Types of pumps: centrifugal, positive displacement, submersible.
- Pump construction: impellers, casings, shafts, seals.
- Pump performance curves: head-capacity, efficiency, power.
- System head curves and pump selection.
- Cavitation and its prevention.

Day 3: Electrical Systems and Motor Control

- Electrical supply systems and distribution boards.
- Motor types (induction, synchronous) and specifications.
- Motor starters: Direct-On-Line (DOL), Star-Delta, Variable Speed Drives (VSDs).
- Control panels, relays, sensors (level, pressure, flow).
- Reading electrical schematics and ladder logic.
- Electrical safety standards and isolation procedures.

Day 4: Routine Operational Procedures

- Pre-start checks: visual inspection, lubrication, alignment.
- Step-by-step start-up and shut-down procedures.
- Monitoring key parameters: flow rates, pump pressures, motor currents, wet well levels.
- Data logging and record-keeping requirements.
- Responding to normal and high-flow conditions.
- Communication protocols during operations.

Day 5: Preventative Maintenance Fundamentals

- Principles of preventative vs. corrective maintenance.
- Maintenance schedules and planning.
- Lubrication types, methods, and intervals.
- Mechanical inspections: coupling alignment, bearing condition, seal leaks.
- Vibration analysis basics.
- Spare parts identification and management.

Day 6: Troubleshooting Common Faults and Failures

- Troubleshooting approach: observation, testing, analysis.
- Common mechanical faults: bearing failure, seal leaks, cavitation.
- Common electrical faults: overloads, phase failure, starter faults.
- Hydraulic issues: loss of prime, reduced flow, excessive head.
- Alarm interpretation and initial response.

- When to escalate issues to specialists.

Day 7: Advanced Maintenance and Overhaul Procedures

- Overhaul planning: risk assessments, permits, tools, and spares.
- Pump disassembly and component inspection.
- Impeller wear ring replacement and clearance adjustment.
- Shaft alignment methods (dial indicator, laser).
- Mechanical seal replacement and packing gland maintenance.
- Post-overhaul testing and commissioning.

Day 8: Safety, Emergency Response, and Environmental Compliance

- Confined space regulations and entry permits.
- Hazardous atmosphere monitoring (H2S, methane, oxygen).
- Emergency response plans and procedures.
- Spill containment and remediation.
- Personal Protective Equipment (PPE) requirements.
- Incident reporting and root cause analysis.

Day 9: Integration, Assessment, and Course Closure

- Integrated scenario-based exercises and simulations.
- Practical skills assessment: routine operation and fault-finding.
- Written knowledge assessment.
- Review of key legislation and best practices.
- Compiling a portfolio of evidence.
- Course evaluation and development of a workplace implementation plan.

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 **12 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 33,300.00	R 33,300.00
1	In-House	R 43,300.00	R 43,300.00
1	On-Campus (Pretoria)	R 50,000.00	R 50,000.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	13 Aug 2026	On-Campus	Cape Town, South Africa
04 Aug 2026	14 Aug 2026	On-Campus	Dubai, UAE
05 Aug 2026	17 Aug 2026	On-Campus	Pretoria, South Africa
05 Aug 2026	17 Aug 2026	On-Campus	Lagos, Nigeria
06 Aug 2026	18 Aug 2026	On-Campus	Johannesburg, South Africa
07 Aug 2026	19 Aug 2026	On-Campus	Mauritius
10 Aug 2026	20 Aug 2026	On-Campus	Dubai, UAE
11 Aug 2026	21 Aug 2026	On-Campus	Pretoria, 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 115955) 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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