



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

Centrifugal Pump Overhaul Procedures

Manufacturing, Engineering and Technology / Engineering and Related Design

Unit Standard 253376 · NQF Level 4 · 7 Credits · 4 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to safely and effectively overhaul centrifugal pumps. It covers the complete disassembly, inspection, repair, reassembly, and testing of centrifugal pumps in compliance with South African standards and manufacturer specifications.

Category	Manufacturing, Engineering and Technology
Subfield	Engineering and Related Design
Unit Standard	253376
Accreditation	SAQA Accredited · NQF Level 4 · 7 Credits
Duration	4 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate knowledge of centrifugal pump components, principles of operation, and common failure modes.
- Apply safe working practices and use appropriate tools and equipment during pump overhaul procedures.
- Disassemble, inspect, measure, and evaluate pump components against manufacturer tolerances.
- Replace or repair worn or damaged components and reassemble the pump to specification.
- Test and commission the overhauled pump to ensure proper performance and leak-free operation.
- Document the overhaul process, including findings, actions taken, and test results.

WHO SHOULD ATTEND

- This course is designed for mechanical maintenance technicians, millwrights, pump fitters, and engineers responsible for the maintenance and repair of centrifugal pumps in industrial settings.

COURSE OUTLINE

Day 1: Fundamentals of Centrifugal Pumps and Safety

- Introduction to centrifugal pumps: theory of operation
- Pump components: impeller, casing, shaft, bearings, seals
- Pump classifications: single-stage, multi-stage, horizontal, vertical
- Pump performance curves and operating principles
- Safety precautions: lockout/tagout, confined space, hazardous energy control
- Tools and equipment required for overhaul

Day 2: Disassembly and Inspection Procedures

- Pre-disassembly checks and documentation
- Step-by-step disassembly sequence
- Bearing inspection: types, clearances, and condition assessment
- Shaft and sleeve inspection: runout, wear, and surface finish
- Mechanical seal and gland packing inspection
- Casing and wear ring inspection
- Measuring techniques: dial indicators, micrometers, feeler gauges
- Recording inspection findings and condition reports

Day 3: Repair, Replacement, and Reassembly Techniques

- Bearing installation: heat/cold methods, press fits, and lubrication
- Mechanical seal installation: faces, stationary and rotary parts
- Gland packing selection and fitting
- Wear ring replacement and clearance setting
- Shaft and sleeve preparation and installation
- Reassembly sequence and torque specifications
- Rotor balancing and dynamic runout checks
- Coupling alignment basics: dial indicator method

Day 4: Testing, Commissioning, and Troubleshooting

- Pre-start checks: rotation, clearance, lubrication, seal flush
- Start-up procedure and monitoring: vibration, temperature, pressure, flow
- Performance testing: flow rate, head, efficiency calculations
- Troubleshooting common problems: cavitation, low flow, seal leakage, bearing overheating
- Predictive maintenance indicators
- Overhaul report writing and record keeping
- Handover and operational readiness

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 **7 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 20,500.00	R 20,500.00
1	In-House	R 26,600.00	R 26,600.00
1	On-Campus (Pretoria)	R 30,800.00	R 30,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	06 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	06 Aug 2026	On-Campus	Dubai, UAE
03 Aug 2026	06 Aug 2026	On-Campus	Cape Town, South Africa
03 Aug 2026	06 Aug 2026	On-Campus	Mauritius
03 Aug 2026	06 Aug 2026	On-Campus	Johannesburg, South Africa
03 Aug 2026	06 Aug 2026	On-Campus	Lagos, Nigeria
11 Aug 2026	14 Aug 2026	On-Campus	Mauritius
11 Aug 2026	14 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 253376) 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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