



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

Disinfection And Oxidation Process Operation And Maintenance Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 115961 · NQF Level 5 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills required to operate and maintain disinfection and oxidation processes in water and wastewater treatment plants. It covers the principles of disinfection and oxidation, safety protocols, and routine maintenance procedures to ensure efficient and compliant plant operations.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	115961
Accreditation	SAQA Accredited · NQF Level 5 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply the principles of disinfection and oxidation processes to ensure effective pathogen removal and water quality compliance.
- Analyze operational parameters such as dosage, contact time, and residual levels to optimize disinfection and oxidation performance.
- Evaluate safety hazards associated with chemical handling and implement appropriate control measures.
- Design routine maintenance schedules for disinfection and oxidation equipment to prevent downtime and ensure reliability.
- Implement corrective actions in response to process deviations or equipment malfunctions.
- Demonstrate proper sampling and testing procedures to verify process efficiency and regulatory compliance.

WHO SHOULD ATTEND

- This course is designed for process controllers, plant operators, and maintenance personnel working in water and wastewater treatment facilities who need to safely and effectively manage disinfection and oxidation systems.

COURSE OUTLINE

Day 1: Fundamentals of Disinfection and Oxidation Processes

- Introduction to disinfection and oxidation: purpose and importance.
- Overview of oxidants: chlorine, chlorine dioxide, ozone, and UV.
- Chemistry of disinfection: reaction kinetics and factors affecting efficacy.
- Regulatory framework: SANS 241 and SAQA unit standard requirements.
- Disinfection by-products: formation, health effects, and control.
- Safety and handling: PPE, storage, and emergency response.
- Basic operation of dosing systems: chlorine gas, hypochlorite, and ozone generators.
- Introduction to process monitoring: residual chlorine and ORP measurement.

Day 2: Operational Procedures and Maintenance Practices

- Operating procedures for chlorination systems: gas, liquid, and tablet feeders.
- Ozone generation and dosing: maintenance of corona discharge cells and contactors.
- UV disinfection systems: lamp cleaning, sleeve maintenance, and intensity monitoring.
- Routine maintenance schedules: daily, weekly, and monthly checks.
- Troubleshooting: low residual, overfeed, equipment alarms, and leaks.
- Calibration of chlorine analyzers, ORP probes, and UV sensors.
- Record keeping and reporting: logs, trends, and compliance documentation.
- Safety drills: chlorine gas leak response and ozone exposure procedures.

Day 3: Advanced Applications and Integrated Process Management

- Advanced oxidation processes: UV/H₂O₂, ozone/H₂O₂, and photocatalysis.
- Process optimization: CT concept, dose control, and demand management.
- Automation and SCADA integration for disinfection systems.
- Case studies: disinfection in wastewater reuse and industrial applications.
- Environmental considerations: residual management and by-product mitigation.
- Preventive maintenance planning: asset lifecycle and spare parts management.
- Regulatory compliance audits: preparing for inspections and reporting.
- Emerging trends: electrochemical disinfection and sustainable oxidants.

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 **6 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 13,900.00	R 13,900.00
1	In-House	R 18,100.00	R 18,100.00
1	On-Campus (Pretoria)	R 20,800.00	R 20,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
24 Aug 2026	26 Aug 2026	On-Campus	Victoria Falls, Zimbabwe
24 Aug 2026	26 Aug 2026	On-Campus	Shenzhen, China
25 Aug 2026	27 Aug 2026	On-Campus	Harare, Zimbabwe
25 Aug 2026	27 Aug 2026	On-Campus	Abu Dhabi, UAE
26 Aug 2026	28 Aug 2026	On-Campus	Bangkok, Thailand
26 Aug 2026	28 Aug 2026	On-Campus	Durban, South Africa
31 Aug 2026	02 Sep 2026	On-Campus	London, UK
31 Aug 2026	02 Sep 2026	On-Campus	Harare, Zimbabwe

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 115961) 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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