



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

Crowe Tower Solution Deaeration Process Operation Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 110443 · NQF Level 3 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills required to operate the deaeration process in a Crowe Tower solution within a chemical or water treatment environment. It covers the principles of deaeration, process control, safety protocols, and troubleshooting to ensure efficient and safe operation.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	110443
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

- Apply the principles of deaeration to control oxygen and other dissolved gases in solution.
- Demonstrate correct startup, shutdown, and normal operation of the Crowe Tower deaeration process.
- Analyze process parameters to maintain optimal deaeration efficiency and product quality.
- Evaluate potential hazards and implement appropriate safety procedures during operation.
- Troubleshoot common operational issues and recommend corrective actions.
- Implement monitoring and recording procedures in compliance with standard operating guidelines.

WHO SHOULD ATTEND

- Process operators, technicians, and shift supervisors involved in the operation of deaeration systems in chemical, water treatment, or industrial plants.

COURSE OUTLINE

Day 1: Introduction to Deaeration Principles

- Overview of water treatment processes
- Fundamentals of dissolved gases in water
- Henry's Law and gas solubility
- Thermal and vacuum deaeration principles
- Introduction to Crowe Tower design
- Safety considerations in deaeration operations

Day 2: Crowe Tower System Components and Layout

- Crowe Tower vessel and internals
- Packing types and tray designs
- Steam injection and distribution systems
- Condensate and vent systems
- Pump types and operation
- Valve types and applications
- Instrumentation for level, flow, temperature, and pressure

Day 3: Operating Principles and Control Strategies

- Startup and shutdown procedures
- Normal operation and steady-state conditions
- Level control strategies
- Pressure and temperature control
- Steam flow control and optimization
- Monitoring dissolved oxygen levels
- Alarm and trip settings

Day 4: Water Quality Testing and Monitoring

- Sampling techniques and safety
- Dissolved oxygen measurement methods
- pH, conductivity, and other relevant tests
- Chemical dosing for oxygen scavenging
- Data logging and trend analysis
- Troubleshooting based on water quality data

Day 5: Troubleshooting and Problem Solving

- Common malfunctions and symptoms
- High dissolved oxygen causes and remedies
- Pressure and temperature deviations
- Carryover and foaming issues
- Fouling and scaling mitigation
- Corrosion mechanisms and prevention
- Root cause analysis methodology

Day 6: Maintenance and Inspection Procedures

- Preventive maintenance schedules
- Inspection of packing and trays

- Cleaning methods for fouled internals
- Valve and pump maintenance
- Instrument calibration
- Safety during maintenance
- Maintenance record keeping

Day 7: Safety, Health, and Environmental Compliance

- Hazard identification and risk assessment
- Personal protective equipment requirements
- Lockout/tagout procedures
- Handling of chemicals (e.g., oxygen scavengers)
- Steam safety and burn prevention
- Environmental compliance and reporting
- Emergency response plans

Day 8: Advanced Operation and Optimization

- Energy efficiency in deaeration
- Heat recovery and condensate return
- Performance benchmarking
- Data analysis for optimization
- Variable load operation
- Integration with boiler feedwater system
- Case studies of optimization

Day 9: Integration, Assessment, and Capstone

- Review of key concepts
- Capstone practical exercise
- Written knowledge assessment
- Practical skills demonstration
- Feedback and improvement plan
- Certification requirements

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
04 Aug 2026	14 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	17 Aug 2026	On-Campus	Mauritius
06 Aug 2026	18 Aug 2026	On-Campus	Cape Town, South Africa
07 Aug 2026	19 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	20 Aug 2026	On-Campus	Abu Dhabi, UAE
11 Aug 2026	21 Aug 2026	On-Campus	Durban, South Africa
11 Aug 2026	21 Aug 2026	On-Campus	Mauritius
12 Aug 2026	24 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 110443) 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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