



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

Supervising And Optimising Separation Process Operations Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 115957 · NQF Level 4 · 8 Credits · 5 Days

COURSE OVERVIEW

This course equips supervisors and team leaders with the skills to oversee and optimize separation process operations in industrial settings. Participants will learn to monitor process performance, troubleshoot inefficiencies, and implement improvements to enhance productivity and safety.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	115957
Accreditation	SAQA Accredited · NQF Level 4 · 8 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply principles of separation processes to monitor and control operations effectively.
- Analyze process data to identify deviations and optimize separation efficiency.
- Evaluate operational procedures to ensure compliance with safety and quality standards.
- Design corrective actions to address process disruptions and minimize downtime.
- Implement continuous improvement strategies to enhance overall process performance.
- Demonstrate leadership in supervising teams during separation process operations.

WHO SHOULD ATTEND

- This course is designed for supervisors, team leaders, and senior operators responsible for managing separation process operations in industries such as mining, chemicals, or manufacturing.

COURSE OUTLINE

Day 1: Fundamentals of Separation Processes

- Overview of separation processes: distillation, absorption, extraction, filtration, etc.
- Key physical properties: density, viscosity, boiling point, solubility.
- Introduction to separation equipment: columns, filters, centrifuges.
- Mass and energy balance basics for separation systems.
- Safety protocols and environmental regulations relevant to separation processes.
- Case study: simple distillation of a binary mixture.

Day 2: Operating Separation Equipment Effectively

- Operating procedures for distillation columns, absorbers, and filters.
- Parameter monitoring: temperature profiles, pressure drops, flow adjustments.
- Control loops and instrumentation: level controllers, reflux ratio.
- Start-up and shut-down sequences.
- Troubleshooting common issues: flooding, weeping, fouling.
- Practical exercise: adjusting reflux ratio to improve separation.

Day 3: Optimising Separation Performance

- Optimisation principles: trade-offs between purity and recovery.
- Data analysis: using trend charts and statistical process control.
- Energy optimisation: heat integration, reboiler and condenser adjustments.
- Reducing waste: minimising off-spec product and emissions.
- Case study: optimising a distillation column for maximum profit.
- Group activity: simulate optimisation using process simulation software.

Day 4: Advanced Separation Techniques and Troubleshooting

- Advanced technologies: reverse osmosis, pressure swing adsorption, ion exchange.
- Systematic troubleshooting: root cause analysis, fishbone diagrams.
- Dealing with foaming, emulsion formation, and solids handling.
- Economic evaluation: cost-benefit analysis of process changes.
- Workshop: troubleshooting a simulated multi-column separation train.
- Review of maintenance strategies to sustain performance.

Day 5: Integration, Compliance, and Continuous Improvement

- Integration with overall plant operations: material and energy flows.
- Regulatory compliance: SHEQ requirements, reporting.
- Performance metrics: yield, purity, energy intensity, uptime.
- Continuous improvement tools: Kaizen, Six Sigma basics.
- Final project: develop an optimisation plan for a real-world scenario.
- Course review and assessment.

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 **8 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 23,000.00	R 23,000.00
1	In-House	R 29,900.00	R 29,900.00
1	On-Campus (Pretoria)	R 34,500.00	R 34,500.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
10 Aug 2026	14 Aug 2026	On-Campus	Pretoria, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Mauritius
17 Aug 2026	21 Aug 2026	On-Campus	Dubai, UAE
17 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 115957) 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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