



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Centrifugation Operations Control And Management Training

Agriculture and Nature Conservation / Secondary Agriculture

Unit Standard 114283 · NQF Level 4 · 14 Credits · 11 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to control and manage centrifugation operations effectively. It covers the principles of centrifugation, operational parameters, maintenance procedures, and safety protocols to ensure efficient and safe separation processes in industrial settings.

Category	Agriculture and Nature Conservation
Subfield	Secondary Agriculture
Unit Standard	114283
Accreditation	SAQA Accredited · NQF Level 4 · 14 Credits
Duration	11 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply the principles of centrifugation to select appropriate equipment for specific separation tasks.
- Analyze operational parameters such as speed, feed rate, and temperature to optimize separation efficiency.
- Evaluate centrifugation performance using key indicators and implement corrective actions as needed.
- Demonstrate proper start-up, operation, and shut-down procedures for centrifugation equipment.
- Implement preventive maintenance schedules and troubleshoot common operational issues.
- Comply with health, safety, and environmental regulations relevant to centrifugation operations.

WHO SHOULD ATTEND

- This course is designed for production supervisors, process operators, and maintenance personnel involved in centrifugation operations in industries such as chemical, pharmaceutical, food processing, and mining.

COURSE OUTLINE

Day 1: Introduction to Centrifugation Principles

- Overview of centrifugation applications in South African industries
- Basic physics: centrifugal force, sedimentation velocity
- Components: rotor, bowl, drive, control systems
- Types: tubular, disc stack, decanter, basket centrifuges
- Safety introduction and personal protective equipment

Day 2: Centrifuge Types and Selection Criteria

- Detailed study of tubular, disc stack, decanter, and basket centrifuges
- Selection factors: feed characteristics, desired separation efficiency
- Throughput and capacity considerations
- Material compatibility and corrosion resistance
- Case studies: mining, food processing, wastewater

Day 3: Centrifuge Operation and Control Systems

- Start-up and shutdown sequences
- Control parameters: bowl speed, feed flow, backdrive
- PID controllers and automation basics
- Alarm systems and emergency stops
- Routine monitoring: vibration, temperature, current draw

Day 4: Process Monitoring and Performance Indicators

- KPIs: solids recovery, cake moisture, centrate clarity
- Sampling and analytical methods
- Data logging and trend analysis
- SPC charts and process capability
- Performance optimization through parameter adjustment

Day 5: Maintenance Strategies and Procedures

- Preventive vs. predictive maintenance
- Lubrication schedules and grease types
- Bearing inspection and replacement
- Seal maintenance: mechanical seals, O-rings
- Maintenance records and logbooks

Day 6: Troubleshooting and Problem Solving

- Common faults: imbalance, wear, blockages
- Vibration analysis and balancing
- Leak detection and seal replacement
- Root cause analysis (5 Whys, fishbone diagram)
- Corrective action planning and implementation

Day 7: Safety, Health, and Environmental Management

- Hazard identification: rotating equipment, high pressure, chemicals
- LOTO procedures and permit-to-work systems
- Personal protective equipment (PPE) requirements
- Spill response and waste management

- Regulatory compliance: OHS Act, NEMA

Day 8: Quality Control and Assurance in Centrifugation

- Quality specifications: cake dryness, liquid clarity
- Sampling protocols and frequency
- Instrument calibration: flow meters, density gauges
- Control charts and capability analysis
- Non-conformance reporting and corrective actions

Day 9: Advanced Control and Automation

- Advanced control strategies: cascade, feedforward
- DCS/SCADA integration and HMI design
- Automated start-up and shut-down sequences
- Data analytics for performance optimization
- Remote monitoring and alarm management

Day 10: Energy Efficiency and Process Optimization

- Energy audit basics: power measurement, specific energy
- Energy-saving strategies: variable speed drives, optimal loading
- Process optimization: trade-offs between recovery and energy
- Lean and Six Sigma in centrifugation
- Case studies: cost reduction in mining and chemical industries

Day 11: Integration, Assessment, and Certification

- Review of key concepts from previous days
- Practical assessment: start-up, monitoring, troubleshooting
- Written test covering theory and calculations
- Documentation: logbook, maintenance records
- Certification process and next steps

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 **14 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 38,400.00	R 38,400.00
1	In-House	R 49,900.00	R 49,900.00
1	On-Campus (Pretoria)	R 57,600.00	R 57,600.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	24 Aug 2026	On-Campus	Cape Town, South Africa
11 Aug 2026	25 Aug 2026	On-Campus	Dubai, UAE
12 Aug 2026	26 Aug 2026	On-Campus	Pretoria, South Africa
13 Aug 2026	27 Aug 2026	On-Campus	Abu Dhabi, UAE
14 Aug 2026	28 Aug 2026	On-Campus	Durban, South Africa
14 Aug 2026	28 Aug 2026	On-Campus	Mauritius
17 Aug 2026	31 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	31 Aug 2026	On-Campus	Dubai, UAE

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 114283) 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.

Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za