



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

Data Centre Cooling Systems

Custom Courses / Engineering & Technical Maintenance

Unit Standard AATICD-0256 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips participants with the knowledge and skills to manage and maintain data centre cooling systems effectively. It covers fundamental principles of cooling, types of cooling systems, and best practices for energy efficiency and reliability. Participants will learn to monitor, troubleshoot, and optimize cooling infrastructure to ensure optimal data centre performance.

Category	Custom Courses
Subfield	Engineering & Technical Maintenance
Unit Standard	AATICD-0256
Accreditation	SAQA Accredited · NQF Level 5 · 10 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Explain the principles of thermodynamics and heat transfer as applied to data centre cooling.
- Identify and describe various cooling system types, including air-based, liquid-based, and hybrid systems.
- Apply best practices for cooling system design, installation, and commissioning.
- Analyze cooling system performance metrics and interpret monitoring data.
- Troubleshoot common cooling system issues and implement corrective actions.
- Evaluate energy efficiency opportunities and recommend improvements to reduce operational costs.

WHO SHOULD ATTEND

- This course is designed for data centre technicians, facilities managers, and IT professionals responsible for the operation and maintenance of data centre environments.
- It is also suitable for engineers and consultants seeking to deepen their understanding of cooling systems.

COURSE OUTLINE

Day 1: Fundamentals of Data Centre Cooling

- Overview of data centre cooling needs
- Heat generation and removal principles
- Cooling system components: CRAC units, chillers, cooling towers
- Introduction to air cooling vs. liquid cooling
- Cooling metrics: PUE, supply/return temperatures

Day 2: Air Cooling Systems and Design

- Hot aisle/cold aisle containment design
- CRAC and CRAH unit operation
- Airflow measurement and balancing
- Floor tile placement and blanking panels
- Fan types and efficiency
- Humidity control in air-cooled environments

Day 3: Liquid Cooling Technologies

- Types of liquid cooling: direct, indirect, immersion
- Chilled water systems: chillers, pumps, piping
- Coolant selection and maintenance
- Heat exchanger types and efficiency
- Leak detection and prevention
- Liquid cooling vs. air cooling trade-offs

Day 4: Cooling System Monitoring and Control

- Temperature, humidity, and pressure sensors
- Building management system (BMS) integration
- Variable speed drives and economizers
- Setpoint optimization and thermal mapping
- Predictive maintenance techniques
- Energy efficiency metrics and reporting

Day 5: Cooling System Design and Integration

- Cooling capacity planning and redundancy levels
- CFD modeling for airflow simulation
- Integrating cooling with fire suppression and power
- Cooling system commissioning and testing
- Case studies of efficient cooling designs
- Future trends: high-density cooling, free cooling

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 **10 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 24,200.00	R 24,200.00
1	In-House	R 31,400.00	R 31,400.00
1	On-Campus (Pretoria)	R 36,200.00	R 36,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	07 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	07 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	21 Aug 2026	On-Campus	Shenzhen, China
24 Aug 2026	28 Aug 2026	On-Campus	Bangkok, Thailand
24 Aug 2026	28 Aug 2026	On-Campus	Victoria Falls, 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 AATICD-0256) 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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