



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

Chiller Plant Operations and Maintenance

Custom Courses / Engineering & Technical Maintenance

Unit Standard AATICD-0253 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips participants with the knowledge and skills required to operate and maintain chiller plants safely and efficiently. Learners will gain a thorough understanding of chiller components, refrigeration cycles, water treatment, and preventive maintenance procedures to ensure optimal performance and compliance with health and safety regulations.

Category	Custom Courses
Subfield	Engineering & Technical Maintenance
Unit Standard	AATICD-0253
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

- Apply principles of thermodynamics and refrigeration cycles to chiller plant operation.
- Demonstrate safe start-up, shutdown, and routine monitoring procedures for chiller systems.
- Analyze chiller performance data to identify inefficiencies and potential faults.
- Implement preventive and corrective maintenance schedules for chiller components.
- Evaluate water treatment requirements and chemical dosing for condenser and evaporator systems.
- Design a basic troubleshooting log and report for common chiller plant issues.

WHO SHOULD ATTEND

- This course is designed for plant operators, maintenance technicians, facilities managers, and engineering personnel responsible for the operation, maintenance, or supervision of chiller plants in commercial, industrial, or institutional settings.

COURSE OUTLINE

Day 1: Fundamentals of Chiller Systems

- Overview of HVAC and chiller systems
- Refrigeration cycle: compressor, condenser, expansion valve, evaporator
- Chiller types and applications
- Performance metrics and efficiency ratings
- Safety procedures and personal protective equipment (PPE)
- Introduction to refrigerants and environmental regulations

Day 2: Chiller Components and Operation

- Compressor types and operating principles
- Condensers: air-cooled vs water-cooled, cooling towers
- Evaporators: flooded, direct expansion
- Expansion devices: thermal expansion valves, orifice plates
- Control panels, sensors, and setpoint adjustment
- Pre-start inspection checklist
- Lubrication and oil management

Day 3: Chiller Plant Systems and Integration

- Chilled water loop design
- Pump types and pump curves
- Control valves: 2-way, 3-way, pressure-independent
- Cooling tower operation: fill, fans, drift eliminators
- Water treatment: scale, corrosion, biological control
- System balancing and differential pressure control
- Integration with building management systems (BMS)

Day 4: Maintenance and Troubleshooting

- Preventive maintenance checklist
- Refrigerant leak detection and recovery
- Electrical troubleshooting: starters, contactors, motors
- Mechanical faults: bearing wear, vibration, surging
- Water-side maintenance: strainers, heat exchangers
- Troubleshooting flowcharts and decision-making
- Documentation and record keeping

Day 5: Advanced Operations, Energy Efficiency, and Practical Integration

- Energy efficiency measures: VSDs, free cooling, heat recovery
- Chiller sequencing and load management
- Performance monitoring: kW/ton, approach temperatures
- Regulatory compliance: SAQA, OHS Act, refrigerant handling
- Case studies and best practices
- Final assessment and course review

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-0253) 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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