



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

Refrigeration and Air Conditioning Technician

Custom Courses / Engineering & Technical Maintenance

Unit Standard AATICD-0249 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips participants with the essential skills and knowledge to install, maintain, and repair refrigeration and air conditioning systems. It covers safety protocols, system diagnostics, and compliance with South African regulations, ensuring technicians can perform their duties efficiently and safely.

Category	Custom Courses
Subfield	Engineering & Technical Maintenance
Unit Standard	AATICD-0249
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 safety procedures and regulations when working with refrigeration and air conditioning systems.
- Diagnose and troubleshoot common faults in refrigeration and air conditioning equipment.
- Install, commission, and maintain various types of refrigeration and air conditioning systems.
- Evaluate system performance and implement energy-efficient practices.
- Demonstrate proper handling and disposal of refrigerants in compliance with environmental standards.

WHO SHOULD ATTEND

- This course is designed for aspiring technicians, maintenance personnel, and experienced tradespeople seeking formal certification in refrigeration and air conditioning systems.

COURSE OUTLINE

Day 1: Fundamentals of Refrigeration and Thermodynamics

- Principles of thermodynamics: heat, temperature, pressure
- The vapour-compression refrigeration cycle
- Key components: compressor, condenser, expansion valve, evaporator
- Types of refrigerants and their properties
- Ozone depletion potential (ODP) and global warming potential (GWP)
- Safety precautions and personal protective equipment (PPE)
- Introduction to tools and instruments used in refrigeration

Day 2: System Components and Electrical Controls

- Compressors: types, operation, and maintenance
- Condensers and evaporators: air-cooled, water-cooled
- Expansion devices: thermostatic expansion valves, capillary tubes
- Electrical fundamentals: voltage, current, resistance
- Control devices: thermostats, pressure switches, relays
- Wiring diagrams and schematic symbols
- Common electrical faults and diagnostic procedures

Day 3: Installation, Commissioning, and Maintenance

- Installation guidelines: site preparation, mounting, piping
- Leak detection methods and repair
- System evacuation and dehydration
- Refrigerant charging procedures
- Preventive maintenance tasks: cleaning, lubrication, inspection
- Common mechanical faults: compressor failure, refrigerant leaks, blockages
- Record keeping and maintenance logs

Day 4: Advanced Troubleshooting and Diagnostics

- Diagnostic tools: manifold gauges, thermometers, clamp meters
- Superheat and subcooling measurement and adjustment
- Pressure-enthalpy diagrams and system analysis
- Troubleshooting flowcharts for common problems
- Energy efficiency: insulation, system sizing, controls
- Environmental regulations: refrigerant recovery, recycling, disposal
- Safety procedures for electrical and refrigerant handling

Day 5: System Design, Load Calculation, and Practical Integration

- Cooling load calculation methods: heat gain sources
- Equipment selection: capacity, efficiency, cost
- Ductwork and airflow basics
- System balancing and air distribution
- Review of codes and standards (SANS, SAQA)
- Professional ethics and customer communication
- Final assessment and course wrap-up

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-0249) 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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