ENGINEERING AND TECHNICAL TRAINING

HVAC and Industrial Refrigeration

5 day course Classroom, online or in-house

Course overview

Cooling is often the largest electrical load on a site and the system nobody maintains until a compressor fails or a product spoils. This course covers running it properly. Delegates work through the refrigeration cycle and the components that execute it, refrigerants including the phase down of high global warming potential fluids and what replaces them, and system types from direct expansion through to ammonia plant. Air handling, distribution and control are covered for building systems. Performance measurement, efficiency and the cost of a fouled condenser follow. Safety receives attention, particularly ammonia. The course closes on troubleshooting, on maintenance regimes and on leak detection and the regulatory obligations attaching to it.

What you will learn

- Explain the refrigeration cycle and the role of each component
- Select refrigerants and understand the phase down of high impact fluids
- Operate direct expansion, chilled water and ammonia systems
- Run air handling, distribution and control for building systems
- Measure performance and quantify the cost of fouling
- Control the safety hazards, particularly in ammonia plant
- Troubleshoot faults and meet leak detection obligations

Who should attend

- Refrigeration and air conditioning technicians
- Facilities and building services engineers
- Maintenance staff on cold storage and process cooling
- Energy managers targeting cooling load
- Safety officers on ammonia refrigeration sites

Course outline

01 The largest load nobody maintains
02 The refrigeration cycle and components
03 Refrigerants and the phase down
04 Direct expansion and chilled water systems
05 Industrial and ammonia refrigeration
06 Air handling, distribution and control
07 Performance, fouling and efficiency
08 Safety, troubleshooting, maintenance and leak detection

Upcoming dates

Dates	Venue	Format	Fee per delegate
12 to 16 October 2026	Online	Online	R8,500
11 to 15 January 2027	Port Louis, Mauritius	Classroom	USD 1,325
22 to 26 March 2027	Windhoek, Namibia	Classroom	R19,950

Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia,

Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit **www.afrisciencegroup.com**, email **info@afriscience.co.za**, or WhatsApp us on **+27 63 479 1136**.

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