



SAIRAC

South African Institute of Refrigeration and Air Conditioning
Johannesburg Region



All courses will be presented at - *Air Conditioning and Refrigeration Academy*
38 Plantation rd, Eastleigh, Edenvale, Tel: (011) 609 – 1118, Fax: (011) 609 – 1104, E Mail: acra@netactive.co.za

- Enrolment Form -

(Please return via fax to 011 609 1104 or e-mail to acra@netactive.co.za)

- COURSE REQUIRED -

Course Name - _____

Course Dates (both dates inclusive) - _____ to _____

- STUDENT INFORMATION -

Name and Surname - _____

I.D. Number - _____

Cell Phone Number - _____

SAIRAC Membership No. _____

- COMPANY INFORMATION -

Company Name - _____ Tel - (_____) _____

Invoice Address - _____

V. A. T. Number - _____ Fax - (_____) _____

Contact Person - _____ Designation - _____

Sign - _____

- PERSON RESPONSIBLE FOR PAYMENT -

Contact Person - _____ Designation - _____

E-mail Address - _____ Tel - (_____) _____

Please print

Fax - (_____) _____

NB. As most courses are fully booked, cancellations result in places on courses not been utilised. The situation is not acceptable as we have many students waiting to attend courses, therefore please note: *All cancellations to be notified at least seven (7) working days before commencement of course, courses not cancelled prior to seven day period will be invoiced in full.*

Please note the following will be required by the student to facilitate his learning at the academy:

*Pen and pencil *Calculator (A standard school type will suffice.) *Ruler *Highlighter

Course details for 2009

Course: Air Conditioning and Refrigeration Fundamentals and thermodynamics
Venue: ACRA
Dates: 27 July, 3 Aug and 11 Aug 2009.
Time: 18H00 to 21H00.
Cost: R1 200.00 Non members and R 900.00 SAIRAC Members.

Presented by: Edward Button.

Course Outcomes:

- The definition of air conditioning and terminology used by industry.
- The Environmental Crisis
- The Cost of Energy
- Alternative Energy Technologies
- The purpose and need for air conditioning.
- Comfort Air conditioning
- Industrial Conditioning Or Process Cooling
- The application of air conditioning
- The working substance
- Properties and state
- Process and cycle
- The system
- Internal energy
- Law of thermodynamics
- General energy equation
- Saturated liquid and vapour
- Superheated vapour

A basic course dealing with the fundamentals, ideal for people new to industry. Sales staff, counter staff would also benefit.

Course: Air conditioning systems, components and controls
Venue: ACRA.
Dates: 21, 28 September and 5 October 2009.
Time: 18H00 to 21H00
Cost: R 1200.00 Non members and R 900.00 SAIRAC Members

Presented by: E Button / G Laidlaw

Course Outcomes:

- Design considerations
- Criteria for selection of a system
- Technical aspects
- Flexibility
- Comfort
- Capital cost
- Owning cost
- System components, dampers, filters, heat transfer surfaces, Humidification, Dehumidification,
- Methods of control, Dampers, Pre-heaters and humidifiers, Humidifiers, Cooling, Dehumidification, Heaters and/or re-heaters.
- Unitary equipment, Room air conditioners, Console-type units, Split-type console units, Packaged equipment
- Central systems, The basic central system, The all-air system, Single zone, all-air system, Air-water systems

Course: Fans: Types, performance, power, selection, noise.
Venue: ACRA
Dates: 26 Oct 2, 9 Nov 2009.
Time: 18H00 for 18H30 to 21H00
Cost: R 1200.00 Non members and R 900.00 SAIRAC Members

Presented by: G K Laidlaw, A Boltina

Course Outcomes:

- What is a fan
- Types of fans, the propeller fan, the axial flow fan, the centrifugal fan
- Fan performance, fan volume, fan outlet velocity, fan velocity pressure, fan total pressure , fan static pressure, fan total pressure vs. Fan static pressure, fan air power, fan efficiency, fan input power, fan performance curves
- Fan laws for variation in speed
- Fan laws for variation in density
- Fan performance in a system
- Fan performance at altitude
- Fan sound, basic principles, sound measurement, sound attenuation
- Centrifugal fan designation, single inlet, single width fans, double inlet, double width fans, rotation and discharge, fan motor position, access panel positions, centrifugal fan arrangement.
- Fan installation, fan inlet conditions, fan discharge conditions
- Axial flow fan designations
- Capacity control of fans, axial flow fans, centrifugal fans
- Fan selection

Book Early to ensure attendance, limited space available.