



SHORT COURSES

We assist learners in development of skills and knowledge necessary for employment and professional growth in the HVAC/R industry.

Mission Statement

We strive to go above and beyond all limitations to guarantee our clients receive remarkable service. It is our promise to clients to leave no stone unturned when it comes to maintaining the highest quality and standards of training and development.

Goals and Objectives

- HVAC Training Academy will institute the following key procedures to reach its goals:
- The creation of a unique, upscale, innovative environment that will differentiate HVAC Training Academy from the other training and development centres.
- A learning environment that will bring people with diverse interests and backgrounds together in a common forum to overcome challenges both professionally and personally.
- Affordable access to the Academy to promote trade development in our province by giving small businesses the opportunity to make use of our training facility.
- We will provide professional services in the most effective manner and with on-going comprehensive quality control programs to ensure the highest standards are delivered.
- We aim to provide 100% client satisfaction.

The Opportunity

- There is very few companies offering training and development in the country, creating a downward spiral in numbers of qualified artisans.
- **The lack of opportunities to qualify, has created a “norm” for artisans to never obtain a trade qualification.**
- Companies hiring unqualified artisans suffer financial losses due to artisans not having the proper required skills and knowledge to ensure customer satisfaction.
- These issues can only be addressed through proper training and development. HVAC Training Academy has the resources to train all aspects of the air-**conditioning and refrigeration fields up to technician’s** level. The emphasis is on adult training, the training of apprentices, learnerships, artisans and technicians.
- The training would be competency based. This means any student attending the course is given an in-depth theoretical knowledge and the practical skills in order to achieve efficiency in the workplace.
- The aim of the training is such that once any of the courses have been completed, the student will be capable to do the job as required.
- The Industries Professional Institute and governing bodies have been consulted in order to achieve consistently high standards.
- This in turn creates better response from customers towards artisan and businesses in terms of service and satisfaction.

SHORT COURSES:

1. Induction in the workplace – HRC0

- Recall applicable sections of the Manpower Training (Act No 56, 1981), with special reference to discipline and legal responsibilities
- Recall applicable grievance procedures
- Recall applicable disciplinary procedures
- Recall company rules and procedures.

2. Safety in the workplace – HRC1

- Recall relevant regulations of the following Act; (where applicable)
- Occupational Health and Safety Act (Act No 85, 1993)
- Minerals Act and Regulations (Act No 50, 1991)
- Attend a standard industrial safety course accredited by the industry
- Recall safety in welding and gas cutting
- Identify relevant colour markings and symbolic safety signs.

3. Hand and workshop tools – HRC2

- Identify measuring, checking, forming, cutting, marking and fastening tools and tooling aids
- Use measuring, checking, forming, cutting, marking and fastening tools and tooling aids
- Maintain measuring, checking, forming, cutting, marking and fastening tools and tooling aids
- Use hand tools applicable to the trade
- Use fixed and portable drilling machines
- Use fixed and portable grinding machines including replacing, setting, truing and ringing of wheels
- Use power tools
- Use hand operated presses
- Dress a grinding wheel
- Fabricate a project relevant to the trade
- Sharpen drills
- Dress screwdrivers
- Sharpen punches
- Sharpen marking-off tools
- Manufacture a project using the following techniques and material: filing, sawing, drilling, tapping, reaming
- Material: mild steel.

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4. Materials – HRC3

- Recall terms, definitions and use of materials pertaining to the trade with special reference to plates, tubes, pipes and hollow sections
- Recall the physical properties and characteristics of metals. Identify ferrous and non-ferrous metals
- Identify metal defects visually
- Recall the use and application of valves and fittings applicable to the trade
- Recall the different materials associated with various refrigerants.

5. Safety in the workplace – HRC4

- Recall terms and definitions pertaining to engineering drawings
- Interpret relevant symbols, abbreviations and tolerances
- Compile material lists from drawings
- Recall symbols and abbreviations used on electrical circuits for schematic and wiring diagrams, connection schedules, layouts and single-line drawings
- Recall symbols and abbreviations as used on engineering drawings
- Recall symbols and abbreviations pertaining to electronic circuit diagrams
- Interpret electrical drawings
- Interpret engineering drawings
- Make free hand sketches of existing circuits and installations including mechanical components
- Identify type of fits from engineering drawings
- Recall symbols and abbreviations pertaining to pneumatic circuit diagrams
- Interpret pneumatic circuit diagrams.

6. Arc welding – HRC5

- Identify and set up AC and/or DC welding machines, equipment including starting up and shutting down procedures
- Differentiate between arc welding consumable
- Prepare material for arc welding
- Tack and arc weld workpieces incidental to the trade using manual arc welding techniques.

7. Gas welding & brazing – HRC6

- Identify and set up oxygen-fuel gas welding equipment including light up, adjustment of gas pressures and shut down procedures
- Differentiate between gas welding consumables
- Prepare material for gas welding
- Gas weld workpieces incidental to the trade.

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8. Gas cutting and heating – HRC7

- Identify and assemble gas cutting and heating equipment, including light up and shut down procedures
- Select nozzles and gas pressures for cutting and heating different materials of various thicknesses
- Recall the theories of expansion and contraction
- Recall and explain the causes of distortion
- Rectify distortion
- Recall precautions and factors to be considered prior to applying heat for manipulations.

9. Basic lifting techniques – HRC8

- Hand cut and heat materials incidental to the trade
- Recall overhead crane signals
- Demonstrate overhead crane hand signals
- Use the following equipment: chain block : 2 ton max / coffering block : 2 ton max / shackles : 2 ton max / chain slings : 2,5 ton max / wire rope slings : 20mm diameter

10. Electrical instruments – HRC9

- Identify and use the following instruments for safety and fault finding as used for electrical systems up to 1200 volts: (voltage tester, multimeter, insulation tester)

11. Electrical cables – HRC10

- Make off and join multi and single core, stranded PVC armoured cable up to 16mm² 4 core, 1200 volt
- Identify ratings of cables by current, voltage and temperature
- Terminate PVC cables (up to 1200 volt) for entry into cable end box using mechanical and compression methods.

12. Electrical AC machines – HRC11

- Connect test and fault find the following AC machines: single phase induction motors and 3 phase squirrel cage induction motors.

13. Fault finding – HRC12

- Fault find on the following: control panels and motor control gear
- Fault find refrigeration equipment with the aid of a fault finding guide.

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14. Couplings and shafts – HRC13

- Identify the following types of couplings - flexible, rigid and universal couplings (cardan shaft)
- Mount and align a tyre coupling
- Mount and align a rigid flanged coupling
- Diagnose and repair faults on the following couplings: Fenner flex, tyre and rigid flanged.

15. Bearings – HRC14

- Identify plain metal bearing materials such as bronze, white metal, synthetic
- Identify solid, split and guide bearings
- Identify classes of bearings
- Identify the following ball bearings - deep groove, angular, contact, self-alignment and thrust
- Fit a ball bearing to a shaft using a hand operated press, sleeve, oil bath and induction heater
- Remove a ball bearing from a shaft using a bearing puller or hand operated press
- Fit a spherical roller bearing and adaptor sleeve to a shaft
- Remove a spherical roller bearing from an adaptor sleeve and shaft
- Fit and remove a thrust bearing on a shaft (single direction)
- Fit a taper roller bearing on a shaft
- Recall types of bearing failures and their causes.

16. Drives – HRC15

- Identify belt drives
- Identify A, B and C class V-belts
- Install and align a single belt drive
- Install and align match set belt drives
- Maintain belt drives.

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17. Assemblies – HRC16

- Identify the following types of fits on shafts and hole basis - clearance, transition, interference
- Fit and dismantle a taper lock bush
- Fit seals to components.

18. Refrigeration – HRC17

- Recall basic refrigeration systems and identify the major components and state their uses
- Pump down a system
- Evacuate refrigeration systems
- Charge refrigeration systems with refrigerant and oil
- Recall the different types of refrigerants
- Recall the various terms used in the refrigeration industry
- Identify the following types of expansion devices and controls- capillary tubes, automatic expansion valves (with internal and external equaliser), distributors, thermostats, pressure switches, oil pressure safety controls and pressure relief devices
- Recall the principles of operation of the following types of expansion devices and controls- capillary tubes, automatic expansion valves (with internal and external equaliser), distributors, thermostats, pressure switches, oil pressure safety controls and pressure relief devices
- Overhaul, adjust and maintain the following types of expansion devices and controls - capillary tubes, automatic expansion valves (with internal and external equaliser), distributors, thermostats, pressure switches, oil pressure safety controls and pressure relief devices
- Carry out a pressure test on equipment/plant
- Commission refrigeration equipment/plant
- Clean contaminated systems
- Recall all the effects of moisture in a system
- Recall all effects of air in a system
- Diagnose faults due to partial and complete blockage in a system
- Recall the requirements for refrigeration oils.

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19. Condensers – HRC18

- Identify the following types of condensers and cooling towers - air, water, evaporative, forced and induced draft cooling towers and industrial water coolers
- Recall the principles of operation of condensers and cooling towers - air-cooled, water cooled, evaporative, forced and induced draft cooling towers and industrial water coolers
- Maintain the following condensers and cooling towers - air-cooled, water cooled, evaporative, forced and induced draft cooling towers and industrial water coolers.

20. Evaporators – HRC19

- Identify the following types of evaporators - plate, bare and finned pipe, shell and tube
- Recall the operation of the following types of evaporators -plate, bare and finned pipe, shell and tube
- Maintain the following types of evaporators - plate, bare and finned pipe, shell and tube.

21. Accessories – HRC20

- Identify the following accessories - liquid receiver, accumulator, muffler, filter drier, sight glass, service valves, oil separator, crankcase heater, vibration isolator, shut-off valve, solenoid valve, heat exchanger and a schreader valve
- Recall the operation of the following accessories- liquid receiver, accumulator, muffler, fitter drier, sight glass, service valves, oil separator, crankcase heater, vibration isolator, shut-off valve, solenoid valve, heat exchanger and a schreader valve
- Maintain the following accessories- liquid receiver, accumulator, muffler, fitter drier, sight glass, service valves, oil separator, crankcase heater, vibration isolator, shut-off valve, solenoid valve, heat exchanger and a schreader valve.

22. Pumps – HRC21

- Identify the following pumps- vertical split, horizontal split, end-suction, close-coupled and in-line pumps
- Recall the operation of the following pump- vertical split, horizontal split, end-suction, close-coupled and in-line pumps
- Maintain the following pumps- vertical split, horizontal split, end-suction, close-coupled and in-line pumps.

23. Fans – HRC22

- Identify the following fans- propeller, axial flow and centrifugal
- Recall the operation of following fans- propeller, axial flow and centrifugal
- Maintain the following fans- propeller, axial flow and centrifugal.

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24. Compressors – HRC23

- Identify the following compressors-reciprocating, screw, centrifugal, hermetic, semi-hermetic and rotary
- Recall the operation of the following compressors- reciprocating, screw, rotary, hermetic, semi-hermetic and centrifugal.

25. Compressor and cold room commission – HRC24

- Install and level a compressor, motor and machine parts on a fabricated base
- Install a commercial refrigeration system of maximum capacity of 10kw refrigeration at 0°C including pipe work.

26. Lubrication – HRC25

- Identify the following types of lubrication systems: force-feed, splash-feed, gravity-feed and refrigeration oil feed
- Identify the following types of lubrications: oil, grease, copper compound, thread cutting compounds and refrigeration oils
- Diagnose faults in a force feed system
- Identify refrigeration oils.

27. Safe Handling of refrigerants – HRC26 (New)

- Know and adhere to safety in the work place
- Identify the different forms of refrigerants and know their uses
- Identify and adhere to the procedure of handling of refrigerants
- Maintain refrigerants safety tools
- Legal requirements of SANS 10147 when handling group 1 refrigerants.

28. Safe Handling of refrigerants – HRC27 (Renewal)

- Know and adhere to safety in the work place
- Identify and adhere to the procedure of handling of refrigerants
- Legal requirements of SANS 10147 when handling group 1 refrigerants.

Note

EXCLUDES: SARACCA Registration Fee



TERMS AND CONDITIONS

Cancellation Policy

HVAC Training Academy reserves the right to make changes/cancellations to the course schedule if there are less than 4 students. Cancellation must be in writing or via email, no show or late cancellation will result in the full amount being charged (no refunds). Cancellations must be made no less than seven calendar days prior to the course date. R250 will be deducted off your refund due to administrative fees.

Assessment and Certification

After the course, and at the discretion of the mentor the students will be reviewed, discussed, assessed and tested on their learning outcome. A score of 80% will be required for successful completion of the course and to be awarded a certificate.

Payment

A 50% deposit of the course value is required to secure your registration. The remainder is to be paid 1 week prior to the start date. Full payment is required before the course commences.

Purchase orders are accepted on enrolment, but payment is due prior to the start of the course.

The total tuition fee includes refreshments and all training material.

Learner Enrolment Document

Please read the following carefully before completing the form below:

Payment and registration policy:

- Enrolments for all courses close two days prior to the training start date, subject to availability.
- HVAC Training Academy will confirm your booking upon receipt of a completed learner enrolment form, as well as a 50% deposit of the course value. Proof of payment and the enrolment form must be emailed to: info@hvactraining.co.za to secure your registration.
- The remainder 50% must be paid 1 week prior to the start date of the workshop. Certification will not be issued to the student/employer if the remainder of the payment is not received.

Cancellation and refund policy:

- To be eligible for a refund of your deposit, we require seven calendar days' notice before the course commences. **Please Note:** R250 registration admin fee will be deducted from your refund.
- Should no notice of cancellation be received, you will be charged the balance of the course (we will notify the employer after the attendance register has been completed).

Learning Program Details

Please tick the relevant box: Western Cape Gauteng Kwa-Zulu Natal

Name of Course: _____

Course Date: _____

Learner Information

First Name: _____

Surname: _____

ID Number: _____

Cell No: _____

Email Address: _____

Postal Address: _____

Code: _____

Job Title: _____

Job Field: _____

Highest Qualification: _____

Invoice Information

Company Name: _____

VAT Registration Number: _____

Postal Address: _____

For Attention: _____

Telephone Number: _____

Fax: _____

Email Address: _____

Authorisation Information

Authorized By: _____

Designation: _____

Signature: _____

Date: _____

Payment Details

Fee: R_____ Vat: R_____ Total Payment Due: R_____

Direct Deposit:
Nedbank Current
Account

Branch:
Business Southern
Peninsula

Account Number:
1133 984 649

Branch Code:
12 32 09

Payment Due:
Final payment due 1 week
prior to workshop start date

Conditions: 50% deposit of course value to be paid to register on course. Full payment is due 1 week prior to the start date of the workshop. Please email proof of payment to info@hvactraining.co.za.

I confirm that the information I have provided is correct and accept responsibility for payment of this account.

Name: _____

Date: _____ Signature: _____

Where did you hear about us? _____

Would you like to be informed of other upcoming courses? _____

Please tick: yes no

Please contact us for more information about our courses, training dates and costs.