

Prospectus 2025



Steppingstones to becoming a qualified and skilled Refrigeration / Air conditioning Artisan.



We provide training in Eco Friendly Refrigerants

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Paarl

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Refrigeration and Airconditioning Trade.

The growing demand for food security and the preservation of fresh produce and the human comfort the need for Refrigeration and Air conditioning is growing by the day. A person interested in becoming an Artisan should seriously consider a career in this vital section in the economy.

RAETECH Training Centre

RAETECH Training Centre was built to address the shortage and out of pure passion for the industry. The mission of the Training Centre is to deliver only quality new Artisans and to upskill Artisans in the field, by adding value to their skill.

Accreditation

RAETECH Training Centre is a fully accredited (NAMB/QCTO/DHET) training and trade test centre offering learnerships, apprenticeships and adult training in our air conditioning and refrigeration training centre. **No:01-QCTO/SDP110522-5431**



Training Venue:

All the training is housed in a modern commercial building equipped with state-of-the-art equipment. All equipment is in a serviceable condition. The layout of the centre was carefully planned to ensure that the students can have the look and feel of a typical setting to the technical nature of the fields of Air Conditioning and Refrigeration. The Training Centre is in Paarl (4 Triangle Street, Triangle Park, Paarl). The premises comprise of offices and air-conditioned and ventilated lecture rooms space as well as well layout workshop area. The large workshop is fully equipped for crucial hands-on training, an absolute necessity when training in the highly technical fields of air conditioning and refrigeration.

A multi-purpose air-conditioned laboratory which focuses on Hydrocarbon Training was built with small scale cold rooms where the students are exposed and trained how to handle flammable refrigerants. The laboratory is equipped with all the necessary alarms systems and all required safety precautions. There are also a fully operational CO₂ cold room where the students will be trained in the use of CO₂ Refrigeration equipment.

The Trade Test Area, which is a separate room, are of modern design with air conditioning to ensure that the candidate can perform the trade test tasks without interference from other students in a professional environment.

Facilitators

The students / apprentices will be trained by well-trained Facilitators that has years of experience in the trade of Air conditioning and Refrigeration. The classes are interactive with real samples of different pieces of equipment to explain hands on the function and the operation.

The Facilitators are NAMB / merSETA registered as Assessors and Moderator to ensure that the training is of the highest standard.

Training Overview

There are resources available at **RAETECH Training Centre** to train:

- ❖ Apprentices / learnerships, artisans and technicians, as well as management aspects that require technical knowledge.
- ❖ Students in all the aspects of air conditioning and refrigeration to NQF Level 4 and trade test levels.
- ❖ Specialized training is provided in the areas of refrigeration, air conditioning, and ventilation. Example Hydrocarbon R290 and CO2 Training.
- ❖ All the training is competency based, which means that students are given in-depth theoretical knowledge and practical skills to achieve competency in the workplace.
- ❖ All the courses have a practical component, where the student can apply the theory in practice.
- ❖ The student will be assessed on any course, the student will be equipped to perform the tasks successfully on completion.



Apprenticeships

Training Programme: **Apprenticeship Refrigeration Mechanic (Industrial & Commercial)**

The apprenticeship system is a well-known technical training system, including practical and theoretical components offered in designated trades to achieve artisan status.

Agreement Duration with merSETA: 2.5 - 4 years

Training Duration: 6 months

Costing: Price per Request



RAETECH WORKSHOP FACILITY

Trade Testing - Refrigeration Mechanic (Industrial / Commercial)

QCTO Accreditation: AC000443NAMB

For contractual learner / apprentice under the Skills Development Act (previously Section 13) and Artisan RPL (Recognition of Prior Learning), (previously Section 28)

Course Name:	Trade Test Readiness - Refrigeration Mechanic (Industrial & Commercial)
Entry Requirements:	Approval from Seta - Serial Number
Duration:	1 - 10 days Monday - Thursday 08h00 until 15h30
Cost:	R 1 410 per day depending on duration
Objectives:	To prepare the candidate for trade testing. Applications for trade testing are available at the Academy.
Available Dates:	Dates issued after receipt of Trade Test Assessment Dates from Seta The dates will be scheduled 10 days / 5 days prior to the Trade Test Assessment date. The duration of Preparation is subject to your knowledge and experience.

Course Name: **Trade Test - Refrigeration Mechanic (Industrial & Commercial)**

For contractual learner/apprentice under the Skills Development Act (previously Section 13) and Artisan RPL (Recognition of Prior Learning), (previously Section 28)

Entry Requirements:	1. Approval from Seta - Reference Number 2. Inlela Conformation
Duration:	2 days Monday & Tuesday / Wednesday & Thursday - 08h00 until 15h30
Cost:	R 4 500.00
Objectives:	The Training Centre is a DHET / QCTO / NAMB / Seta Accredited Decentralized Trade Test Centre (National Certification). Applications for trade testing available at the Academy.
Available Dates:	Trade Test dates are issued by merSETA after submission of your Trade Test Application at your nearest merSETA office - contact merSETA at 010 219 3000.

Modular Training Courses offered at RAETECH Training Centre

▪ Apprenticeships

Apprenticeship - Refrigeration Mechanic (Industrial/Commercial)
- Duration: min. 80 weeks - max. 4 years

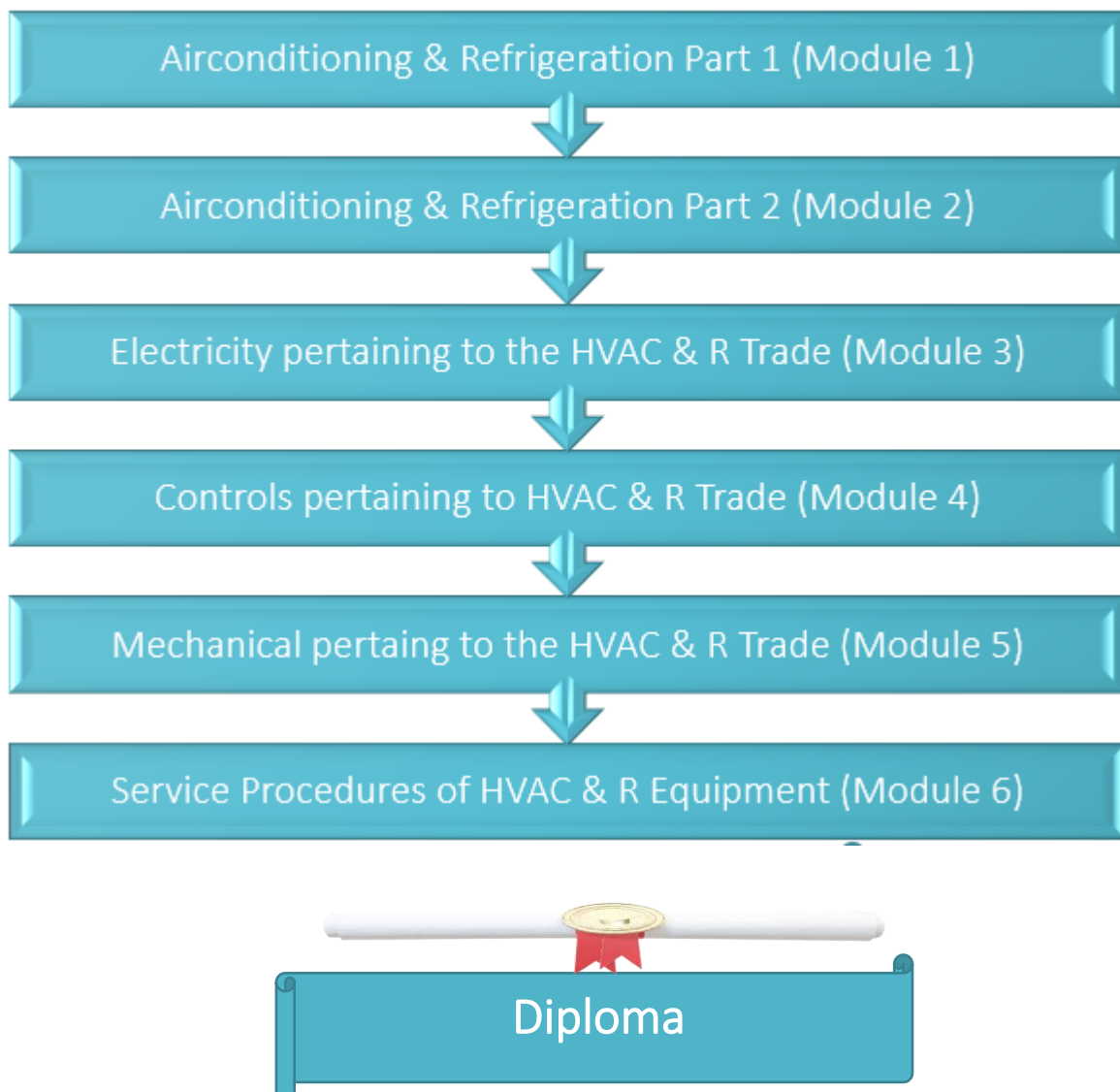
▪ Trade Testing - Refrigeration Mechanic – Apprentice and RPL candidates

Trade Test Preparation (approximately 05 - 10 Days)
Trade Test-Test (02 Days)

▪ The RAETECH Diploma:

The RAETECH Diploma is a unique, specifically designed set of training modules that encompasses most of the training that an Air Conditioning and Refrigeration Technician needs to be competent to perform the work to a high standard. The student need six Modules of which four is compulsory. Two modules can be selected form the remaining Modules if it has minimum of 10 days duration. Authorized Gas Practioner Courses do not form part of the RAETECH Diploma.

Example of the Composition of the RAETECH Diploma:



It is not necessary to complete all the courses at once, the specific training can be selected and broken up into sections, it must just be completed in sequence.

TRAINING COURSES - DETAILED OVERVIEW - The RAETECH Diploma

Course Name:	Introduction & Induction to the Refrigeration Trade (Compulsory)
RAETECH Module	00
QCTO Module	KM 622701000 KM01/KM02/KM04
Entry Requirements:	Grade 9 with Basic Literacy and Numeracy
Duration:	5 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R6 522.50
NQF Level:	Level 2
Objectives:	This course covers all the Introduction and Induction to the Refrigeration Trade. All Health and Safety aspects is covered to ensure that that safe work practices is applied and as such it is imperative that all persons complete the course. No previous knowledge or experience is required.
Outcomes:	<p>Upon successful completion of this course the student will:</p> <ul style="list-style-type: none"> ➤ Understand safety procedures, refrigerants, ➤ The Vapor Compression Cycle ➤ Basic Thermodynamics. ➤ Tooling, Safety, ➤ Components and Accessories, ➤ Pipework, (Copper, Aluminium) ➤ Servicing, Repair, and ➤ Installation procedures the student will be able to perform the applicable practical aspects on the job site. <p>The student can further his studies. The range of study progresses through air conditioning and refrigeration to and including large central plants. It is strongly advised that students and companies consider the electrical course and modules 2 to 7.</p>
Range of skills:	Pipe work / evacuation / flaring / swaging/ charging/recovery/ testing/ tools and instruments/ safety/ refrigerants/ refrigerant containers/ basic thermodynamics / basic refrigeration cycle/ fittings/ trade related tools/ refrigerants/ air conditioning and refrigeration components manifold gauges, service valves, operation and setting of expansion devices, setting pressure switches.

Course Name:	Basic Refrigeration Part 1 (Compulsory)
RAETECH Module	01
QCTO Module	KM 622701000 KM04/KM05/KM06/ KM07/KM09/ KM11/ KM23/ KM26/PM01/ PM03/ PM04/ PM06/ PM07
Entry Requirements:	Grade 9 with Basic Literacy and Numeracy
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 2
Objectives:	This course covers all the fundamentals of theoretical knowledge and practical skills required by all those wishing to work in the fields of air conditioning and, or refrigeration. This course forms the foundation and as such it is imperative that all persons complete the course. No previous knowledge or experience is required. Should a student wish to obtain the RAETECH Diploma Modules 1 to 7 The course has a full theory and practical component in our workshops.
Outcomes:	<p>Upon successful completion of this course the student will:</p> <ul style="list-style-type: none"> ➤ Understand safety procedures, refrigerants, ➤ The Vapor Compression Cycle ➤ Basic Thermodynamics. ➤ Tooling, Safety, ➤ Components and Accessories, ➤ Pipework, (Copper, Aluminium) ➤ Servicing, Repair, and ➤ Installation procedures the student will be able to perform the applicable practical aspects on the job site. <p>The student can further his studies. The range of study progresses through air conditioning and refrigeration to and including large central plants. It is strongly advised that students and companies consider the electrical course and modules 2 to 7.</p>
Range of skills:	Pipe work / evacuation / flaring / swaging/ charging/recovery/ testing/ tools and instruments/ safety/ refrigerants/ refrigerant containers/ basic thermodynamics / basic refrigeration cycle/ fittings/ trade related tools/ refrigerants/ air conditioning and refrigeration components manifold gauges, service valves, operation and setting of expansion devices, setting pressure switches.



Course Name:	Basic Refrigeration Part 2 (Compulsory)
RAETECH Module	02
QCTO Module	642701000-KM-09/ KM12/ KM14 / KM17 / KM22/ KM28 / KM29 / KM30 PM05/PM-14 / PM21/PM23
Entry Requirements:	Module 1. Basic Literacy and Numeracy
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 3
Objectives:	Participants in this course will gain intermediate knowledge and practical skills necessary to work in the air conditioning and/or refrigeration fields. This course forms the second stage and as such is imperative that all persons complete the course. The course has a full theory and practical component in our accredited workshop.
Outcomes:	<p>A student who successfully completes this course will be able to:</p> <ul style="list-style-type: none"> ➤ comprehend the intermediate aspects of refrigeration and air conditioning. ➤ Superheat measurement, setting and the importance thereof, ➤ sub-cooling, ➤ LP and HP Pressure switch setting determination and actual setting on an installation, ➤ Basic refrigeration commissioning techniques and procedures. ➤ Types of refrigeration systems, ➤ Types of air conditioning systems, evaporative coolers, air conditioning components, heating, ➤ Critical charging, compressor testing, fault finding. <p>Students can further their studies. The range of study progresses through air conditioning and refrigeration to and including large central plants.</p>
Range of skills:	Fault finding / basic commissioning/procedures on walk in fridges / freezer / air conditioning units / critical charging/humidity / recovery of refrigerants.



Course Name:	ELECTRICAL pertaining to the HVAC & R Trade Part 1 (Compulsory)
RAETECH Module	03
QCTO Module	642701000 /KM-10 /KM28/ PM-13/ PM-26
Entry Requirements:	Module 1 including Basic Literacy and Numeracy
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 2
Objectives:	All electrical aspects, theory, and skills necessary for working in the refrigeration and air conditioning fields are covered through this course. This course forms the foundation of the electrical aspects and as such it is imperative that all persons complete the course. Controls courses follow. No previous electrical knowledge is required but module 1 should have been completed. The course has a full theory and practical component in our workshop. The course compliments the Module 1. This course focuses on single phase systems.
Outcomes:	<p>Upon successful completion of this course, the student will have gained an understanding and practical skills relating to air conditioning and refrigeration electrical systems.</p> <ul style="list-style-type: none"> ➤ Understand Ohm's Law, ➤ Kirchhoff's Law, ➤ Volt, current, ➤ resistance, energy, ➤ and power, ➤ alternating current and ➤ direct current, magnetic fields and flux, ➤ power generation, ➤ conductors, components, ➤ accessories, ➤ symbols, basic electrical layouts, ➤ dangers of electricity and potential hazards as well as methods to prevent injuries.
Range of skills:	Identify, select and the use of electrical tools and instruments. Identify, test, and connect electrical conductors (jointing, installation, and termination methods) Install trunking. Read and interpret diagrams. Maintain electrical systems including controls, components, accessories, motors, and panels. Electrically isolation, maintenance procedures of electrical panels and switch gear, components and conductors paying attention to lose connections.



Course Name:	ELECTRICAL pertaining to the HVAC & R Trade Part 2 (Compulsory)
RAETECH Module	04
QCTO Module	642701000 /KM-10 /KM28/ KM32 / PM-13/ PM-26
Entry Requirements:	Module 1 including Basic Literacy and Numeracy
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 4
Objectives:	All electrical aspects, theory, and skills necessary for working in the refrigeration and air conditioning fields are covered through this course. This course forms the foundation of the electrical aspects and as such it is imperative that all persons complete the course. Controls courses follow. No previous electrical knowledge is required but module 1 should have been completed. The course has a full theory and practical component in our workshop. The course compliments the Module 3. This course focuses on single and Three phase systems.
Outcomes:	<ul style="list-style-type: none"> ➤ Upon successful completion of this course, the student will have gained an understanding and practical skills relating to air conditioning and refrigeration electrical systems. ➤ Understand Control Circuits ➤ Understand Main Circuits, ➤ Identify Starters, ➤ Design elementary Control Circuits, ➤ Design elementary Main Circuits alternating current ➤ Rate the equipment required ➤ Select conductors, components, accessories, ➤ symbols, basic electrical layouts, ➤ dangers of electricity and potential hazards as well as methods to prevent injuries. ➤ Build / wire electrical Panels.
Range of skills:	Identify, select and the use of electrical tools and instruments. Identify, test, and connect electrical conductors (jointing, installation, and termination methods) Install trunking. Read and interpret diagrams. Maintain electrical systems including controls, components, accessories, motors, and panels. Electrically isolation, maintenance procedures of electrical panels and switch gear, components and conductors paying attention to lose connections.

Course Name:	Controls pertaining to Refrigeration & Air Conditioning (Selective)
Entry Requirements:	Modules 1,2 & 3 including Basic Literacy and Numeracy
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
RAETECH Module	05
QCTO Module	62701000-KM-28 / KM40 / PM23 / PM26
Cost:	R13 045
NQF Level:	Level 4
Objectives:	The course covers the intermediate of the Control theory and practical skills required of all persons wishing to work in the air conditioning and/or refrigeration industries. The course has a full theory and practical component in our workshop. The course compliments the Module 3 and 4.
Outcomes:	<p>Upon successful completion of this course the student will have:</p> <ul style="list-style-type: none"> ➤ the understanding and the practical skills pertaining to the interpretation of single-phase Control circuits wiring diagrams, the wiring of control panels, electrical motors, and starters Single and Three phase applicable to air conditioning and refrigeration systems. ➤ Inspection and maintenance of electrical panels, electrical motors, starter panels and circuits. Fault-finding and repairing single and three phase electrical panels, electrical motors, starter panels and circuits. Construction of single and three phase electrical motors, starter circuits. ➤ Operation and testing of electrical motors.
Range of skills:	Connect basic controls, components, accessories, and motors with the appropriate wiring/conductors. Test operation of the circuit and electrical components in the system and take corrective action if needed. Identify electrical controls, components, accessories, and motors from drawings. Construct complete electrical system including controls, components, accessories, motors, and panel with the correctly identified cabling/conductors. Fault-find electrical circuits and equipment in the air conditioning and/or the refrigeration fields. (Single and three phase) Test and connect electrical motors (Single and three phase).



Course Name:	Mechanical in HVAC & R (Compulsory)
RAETECH Module:	06
QCTO Module	642701000 – KM-06/ KM-12/ KM-13/ KM-16/KM21/ PM-8 /PM13/PM18/ PM24
Entry Requirements:	Completion 1,2,3 & 4 Including Basic Literacy and Numeracy
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R13 045
NQF Level:	Level 3
Objectives:	<p>On successful completion of this course the student will have:</p> <ul style="list-style-type: none"> ➤ the necessary knowledge and practical skills to perform more of the advanced mechanical aspects of the trade related to central plants / ducted / indirect systems. ➤ Chillers, air delivery systems, filtration, water reticulation systems form the core of this course. ➤ This course is the fifth phase of the RAETECH Diploma course but may be used alone ending at this level.
Outcomes:	Central and industrial air conditioning systems, maintenance schedules, air distribution equipment, air cleaning equipment and filtration, lubrication, water reticulation equipment, ventilation and ventilation rate determination and measurement, airflow measurement, heating, basic psychrometric' s and variable volume systems, water treatment methodology and systems.
Range of skills:	Air flow balancing, ventilation rates, developing and applying maintenance schedules, burn out procedures, ventilation rate measurement, air flow measurements, commissioning, lubrication, fans and pumps and basic psychometrics, central plant layouts. servicing/ belt drives tensioning and alignment / couplings / bearings / various systems and their operation and application / controls and safety devices / vapor barriers.



Course Name:	Service Procedure in HVAC & R (Selective)
RAETECH Module:	07
QCTO Module	642701000-KM-12 / KM-13 /KM37/KM20/KM21 / PM-20 /PM-27 / PM-31
Entry Requirements:	Completion of modules 1, 2, 3,4,5 & 6.
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 4
Objectives:	In this course, we cover the advanced Service Procedures on aspects of air conditioning and refrigeration, including the central plant and air conditioning in depth. This course will enable the student to perform retrofitting work, conduct heat load calculations for estimating and installation purposes, ventilation rate calculations for commercial and industrial applications, calculation of system performance, capacity, advanced fault finding, psychrometric' s and Mollier (Pressure / enthalpy) diagrams.
Outcomes:	<p>Upon successful completion of this course the student will have:</p> <ul style="list-style-type: none"> ➤ the understanding and skills to determine a systems operating parameter from a pressure enthalpy diagram, ➤ calculation of plant capacities, C.O.P.EER EESER ➤ compressor efficiency, mass flow, heat rejection, confirmation of superheat and sub-cooling etc. ➤ In addition: fault finding using a pressure enthalpy chart, heat load calculations for air conditioning and refrigeration applications, the retrofitting process, psychometrics. <p>This is an in-depth course the level is with-in the artisans / technician's scope of work. This is specifically aimed at persons wishing to have an in depth understanding of the trade.</p>
Range of skills:	Central plant air conditioning / advanced fault finding using Mollier diagrams / heat load calculations. Psychometrics, air flow rates and balancing, determination and calculation of ventilation rates, air changes per hour/ humidity/ maintenance schedules / evaporative cooling sizing and design. Properties of air, humidification, calculations involving heat & mass transfer. Air flow measurements, air changes, flow rates, duct balancing, define operating parameters, refrigerant blends/temperature glide, operational faults & remedial action. Detailed practical Mollier chart application, determination of plant capacity, C.O.P.EER, EESER. Compression ratios, super heat & sub cooling, mass flow and fault finding.



Course Name:	Welding, Brazing & Cutting, copper to copper, Oxy/Acetylene (Compulsory in Module 1)
RAETECH Module	08
QCTO Module	642701000-KM-07/KM-23/PM-06/PM-07
Entry Requirements:	Basic Literacy and Numeracy
Duration:	5 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 6 522.50
NQF Level	2 & 3
Objectives:	Typically for candidates working on general welding i.e., brackets/condenser brackets. Perform basic arc welding, brazing of copper to copper, copper to brass and use of the cutting torch. Selecting and checking welding equipment and consumables. Operating welding equipment. Applying safety equipment and procedures. Ensuring suitability and strength of weld. Electric arc, MIG and TIG welding.
Outcomes:	On successful completion of this course the student will be able: <ul style="list-style-type: none"> ➤ to interpret job instructions. ➤ Identify arc-welding equipment and check it for safety and suitability. ➤ Welding consumables are inspected for correct size and suitability. ➤ Metals to be welded are inspected for suitability. Things that make metals and/or consumables unsuitable are listed and discussed. ➤ Safety equipment and procedures required are listed and discussed. Arc-weld metals. ➤ Metals to be welded are prepared for welding process. Work area is inspected for fire hazard, secured, and made safe. ➤ Appropriate welding process is applied. Weld is cleaned using correct procedure. ➤ Consequences of using wrong power setting or wrong consumables are listed and explained. ➤ Correct and all safety equipment is used. ➤ Apply quality checks on completed weld and correct if necessary. ➤ Visual check is conducted to ensure quality weld. Weld is checked for strength. ➤ Workpiece is checked for compliance with job sheet. Improper welded sections are made good.
Range of skills:	Electric Arc welding, <ul style="list-style-type: none"> ➤ Electrode ➤ MIG welding, ➤ TIG Welding, Oxy/acetylene: <ul style="list-style-type: none"> ➤ Copper to copper, ➤ Brazing ➤ Silver Solder

Course Name:	Domestic Refrigeration (Selective)
RAETECH Module	09
Entry Requirements:	Basic Literacy and Numeracy
QCTO Module	642701000 / KM-04 / KM05/ KM06 / PM-16
Duration:	5 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 6 622.50
Objectives:	Domestic Refrigeration, fault finds commissions and repairs domestic. Introduction to Unitary Airconditioning Units.
Outcomes:	On successful completion of this course the student will be able To work on: <ul style="list-style-type: none"> ➤ Review of basics in refrigeration (DR) ➤ Applicable Standards ➤ Flammable refrigerants in domestic refrigeration ➤ DR functional principles ➤ Generic design of fridges and freezers ➤ Servicing matters DR ➤ Electrical circuit diagnostics ➤ Refrigerant handling and DR system commissioning
Range of skills:	Do any repair and fault finding on Domestic Refrigeration Fridges and Freezers and other smaller cooling equipment. Do basic Service work on Unitary AC Units.

Course Name:	Water Chiller Course – Advanced (Selective)
RAETECH Module:	10
QCTO Module	642701000-KM-12 / KM-13 /KM20/ KM24/KM37 /PM-24 /PM-27 / PM-31
Entry Requirements:	Completion of modules 1, 2, 3,4,5,6&7
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 3
Objectives:	In this course, we cover the advanced aspects chilled water technology, including all the ancillary components that form part of the installation. Central plant and air conditioning in depth. This course will enable the student to perform retrofitting work, installation and maintenance procedures purposes, ventilation rate calculations for commercial and industrial applications, calculation of system performance, capacity, advanced fault finding, psychrometric' s and Mollier (Pressure / enthalpy) diagrams.
Outcomes:	<p>Upon successful completion of this course the student will have:</p> <ul style="list-style-type: none"> ➤ the understanding and skills to determine a systems operating parameter from a pressure enthalpy diagram, ➤ calculation of plant capacities, C.O.P.EER EESER ➤ compressor efficiency, mass flow, heat rejection, confirmation of superheat and sub-cooling etc. ➤ In addition: fault finding using a pressure enthalpy chart, ➤ Fundamentals of psychometrics. <p>This is an in-depth course the level is with-in the artisans / technician's scope of work. This is specifically aimed at persons wishing to have an in depth understanding of this subject.</p>
Range of skills:	Chilled water as an applied system in Central plant air conditioning / advanced commercial applications. Using Mollier diagrams / heat load calculations. Pump and pipe selections. Determine operational faults & remedial action. Detailed practical Mollier chart application, determination of plant capacity, C.O.P.EER, EESER. Compression ratios, super heat & sub cooling, mass flow and fault finding. All different types of chillers will be covered.

Course Name:	Industrial Refrigeration Ammonia Course – Advanced (Selective)
RAETECH Module:	19
QCTO Module	642702000-KM-12 / KM-13 /KM20/ KM24/KM37 /PM-24 /PM-27 / PM-31
Entry Requirements:	Completion of modules 1, 2, 3,4,5,6&7
Duration:	10 days – Monday – Thursday 08h00 until 15h30 Friday 13:00
Cost:	R 13 045
NQF Level:	Level 3
Objectives:	In this course, we start at Basic Refrigeration and build up to the vapour refrigerant cycle, we cover the advanced aspects Industrial Refrigeration systems specific where Ammonia is used as a refrigerant. Including all the ancillary components that form part of the installation. In this course will enable the student to perform retrofitting work, installation and maintenance procedures purposes, elementary calculations for industrial applications, calculation of system performance, capacity, advanced fault finding, psychometric' s and Mollier (Pressure / enthalpy) diagrams.
Outcomes:	<p>Upon successful completion of this course the student will have:</p> <ul style="list-style-type: none"> ➤ the understanding and skills to determine a systems operating parameter from a pressure enthalpy diagram, ➤ compressor efficiency, mass flow, heat rejection, confirmation of superheat and sub-cooling etc. ➤ In addition: fault finding using a pressure enthalpy chart, ➤ Fundamentals of psychometrics. <p>This is an in-depth course the level is with-in the artisans / technician's scope of work. This is specifically aimed at persons wishing to have an in depth understanding of this subject.</p>
Range of skills:	<ul style="list-style-type: none"> ➤ Understand Refrigeration Trade Theory. ➤ Understand the vapour Compression Cycle ➤ Understand the safety procedure in the handling of Ammonia as a refrigerant. ➤ Understand the different types of Industrial applications where Ammonia is used as a refrigerant. ➤ Understand Pressure Testing Procedures ➤ Understand Deep Vacuum Procedures ➤ Charging of an Ammonia system. ➤ Service procedures for an Ammonia Plant.

Safe handling of Refrigerants

SAQCC / SARACCA Authorised Gas Practitioner Course

Course Name:	Safe Handling of Refrigerants – F Gasses
RAETECH Module	11
QCTO Module	KM642701000, KM01, KM02, KM09, KM11, KM12, KM14, KM26 PM01, PM03, PM04, PM05, WM1, WM07, WM16
QCTO Skills Program	SP-210408
Entry Requirements:	Basic Literacy and Numeracy and Module 1 Advisable
Duration:	3 days – Monday – Friday 08h00 until 15h30
Cost:	R 6 182.00
Objectives:	Training and assessment to comply with the legal requirements of the OHS Act. Pressure Equipment Regulation (Clause 17-18) July 2009 No. 85 of 1993.
Outcomes:	On successful completion of this course the student will be able: <ul style="list-style-type: none"> ➤ This course, required by law enables persons to register as an authorised person in the relevant categories with SARACCA.
Range of skills:	The candidate will understand the Safety and Legal aspects with regards to the Pressure Vessel Regulation

Price Excludes:

SARACCA Reg. fee of R 2 530.00 incl. vat payable directly towards SARACCA.

For the License Card via SARACCA – 2 colour id photos, certified copy of id, Copies of relevant Certificates/Qualification, certified copy of **RAETECH Certificate** and Trade Test Certificate (if applicable) should be attached to the application / emailed to SARACCA.

Candidates who apply for the license card will also be registered on the website www.saqccgas.co.za

On successful completion of the course if the candidate does not apply for the Safe Handling Card **within 6 months from successful completion of course** – the candidate will have to redo the training.

SAQCC / SARACCA Authorised Gas Practitioner Course

Safe handling of Refrigerants F Gasses – Renewal

Course Name:	Safe Handling of Refrigerants – F Gasses – Renewal
RAETECH Module	12
QCTO Module	KM642701000, KM01, KM02, KM09, KM11, KM12, KM14, KM26 PM01, PM03, PM04, PM05, WM1, WM07, WM16
QCTO Skills Program	SP-210408
Entry Requirements:	Valid or expired SARACCA Safe Handling of Refrigerant License. Not Longer than then 6 months expired.
Duration:	2 days – Monday – Friday 08h00 until 15h30
Cost:	R 2 780.00
Objectives:	Training and assessment to comply with the legal requirements of the OHS Act. Pressure Equipment Regulation (Clause 17-18) July 2009 No. 85 of 1993.
Outcomes:	On successful completion of this course the student will be able: <ul style="list-style-type: none"> ➤ This course, required by law enables persons to register as an authorised person in the relevant categories with SARACCA.
Range of skills:	The candidate will understand the Safety and Legal aspects with regards to the Pressure Vessel Regulation

Price Excludes:

SARACCA Reg. fee of R 2 530.00 incl. vat payable directly towards SARACCA.

For the License Card via SARACCA – 2 colour id photos, certified copy of id, Copies of relevant Certificates/Qualification, certified copy of **RAETECH Certificate** and Trade Test Certificate (if applicable) should be attached to the application / emailed to SARACCA.

Candidates who apply for the license card will also be registered on the website

www.saqccgas.co.za

On successful completion of the course if the candidate does not apply for the Safe Handling Card **within 6 months from successful completion of course** – the candidate will have to redo the training.

SAQCC / SARACCA Authorised Gas Practitioner Course

Safe handling of Refrigerants – Ammonia

Course Name:	Safe Handling of Refrigerants – Ammonia
RAETECH Module	13
QCTO Module	KM642701000,
Unit Standard	116704/116223, 116334, 116355, 116700, 116468
Entry Requirements:	Basic Literacy and Numeracy and Module 1 Advisable
Duration:	5 days – Monday – Friday 08h00 until 15h30
Cost:	R 7 632.00 excl. VAT
Objectives:	Training and assessment to comply with the legal requirements of the OHS Act. Pressure Equipment Regulation (Clause 17-18) July 2009 No. 85 of 1993.
Outcomes:	On successful completion of this course the student will be able: <ul style="list-style-type: none"> ➤ This course, required by law enables persons to register as an authorised person in the relevant categories with SARACCA.
Range of skills:	The candidate will understand the Safety and Legal aspects with regards to the Pressure Vessel Regulation

Price Excludes:

SARACCA Reg. fee of R 2 530.00 incl. vat payable directly towards SARACCA.

For the License Card via SARACCA – 2 colour id photos, certified copy of id, Copies of relevant Certificates/Qualification, certified copy of **RAETECH Certificate** and Trade Test Certificate (if applicable) should be attached to the application / emailed to SARACCA.

Candidates who apply for the license card will also be registered on the website www.saqccgas.co.za

On successful completion of the course if the candidate does not apply for the Safe Handling Card **within 6 months from successful completion of course** – the candidate will have to redo the training.

SAQCC / SARACCA Authorised Gas Practitioner Course

Safe handling of Refrigerants Ammonia – Renewal

Course Name:	Safe Handling of Refrigerants – Ammonia – Renewal
RAETECH Module	14
Module	KM642701000, KM01, KM02, KM09, PM01, PM03, PM04, PM05, WM1
Unit Standard	116704/116223, 116334, 116355, 116700, 116468
Entry Requirements:	Valid or expired SARACCA Safe Handling of Refrigerant License. Not Longer than then 6 months expired.
Duration:	2 days - Monday - Friday 08h00 until 15h30
Cost:	R 4 160.00 excl. VAT
Objectives:	Training and assessment to comply with the legal requirements of the OHS Act. Pressure Equipment Regulation (Clause 17-18) July 2009 No. 85 of 1993.
Outcomes:	On successful completion of this course the student will be able: <ul style="list-style-type: none"> ➤ This course, required by law enables persons to register as an authorised person in the relevant categories with SARACCA.
Range of skills:	The candidate will understand the Safety and Legal aspects with regards to the Pressure Vessel Regulation

Price Excludes:

SARACCA Reg. fee of R 2 530.00 incl. vat payable directly towards SARACCA. This fee is subject to change and is not set by RAETECH Training Centre.

For the License Card via SARACCA – 2 colour id photos, certified copy of id, Copies of relevant Certificates/Qualification, certified copy of **RAETECH Certificate** and Trade Test Certificate (if applicable) should be attached to the application / emailed to SARACCA.

Candidates who apply for the license card will also be registered on the website www.saqccgas.co.za

On successful completion of the course if the candidate does not apply for the Safe Handling Card **within 6 months from successful completion of course** – the candidate will have to redo the training.

CLASS TIMES AND INFORMATION

Mondays - Thursday:

Training Start:	08:00 am	Training Ends:	15:30 pm
Lunch Time:	12:00 pm	Lunchtime Ends:	12:45 pm
Study Time Start:	15:30 pm	Study Time Ends:	16:00 pm

Fridays:

Training Start:	08:00 am	Training Ends:	13:00 pm
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Tea Breaks:

Tea & Coffee is included and will be served at the following times:

Morning -	07:40am to 8:00am
Tea Break -	10:00am to 10:30am
Lunch Time -	12:00pm to 12:45pm

Parking:

Safe and Secure parking is available (first come first served) inside the premises.

What to Bring:

- **Relevant PPE** - no students will be allowed in the Centre.
- **STATIONARY** - pen, pencil, ruler, eraser, highlighters, note pad and calculator
- ID / copy of ID.

NO CELLPHONES ALLOWED DURING CLASS.

Bookings: See request 2025 Enrolment form - please complete the form and return via email to info@raetech.co.za Also send a copy of ID and proof of 50% Deposit paid to reserve your seat. All fees must be paid before the training date.

TRAINING DATES:

Contact the Training Centre for available dates on 021 862 2019

“Education is the most powerful weapon which you can use to change the world.”

By Nelson Mandela

