

Certificate in Electrical Installation



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Certificate in Electrical Installation

TVET PROGRAMME



Purpose

The purpose of this award is to enable the learner to attain standards required to achieve the Certificate in Electrical Installation, through the knowledge, skill and attitudes essential in all Electrical Installation, diagnostics, maintenance, commissioning and repair in accordance to the national standards.

This qualification enables a competent learner at NQF Level 3, under direct supervision, to demonstrate a basic ability to install, service, repair and operate Electrical equipment that is used in the Electrical industry.

Certificate in Electrical Installation

Introduction

The Certificate in Electrical Installation is a one(1200hours) training programme offered full-time to secondary five (S5) school leavers. This is equivalent to two (2) semesters.

Two semesters represents one academic year. The same is also offered on part-time and apprenticeship to learners already over three (3) semesters. Learners on the part-time come to SIT for lectures 1 1/2 days per week. Learners on the apprenticeship come to SIT one day per week.

An Electrical Installation Technician works on domestic Electrical appliances and also install Electrical wiring domestic and industrial buildings . .

The Electrical technician generally works inside domestic, commercial or public buildings during and after construction and production. He or she will install, maintain, fault find and repair systems to a high standard. Work organization and communication and interpersonal skills, problem solving, flexibility are the universal attributes of the outstanding Electrical Installation and Servicing.

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Career Opportunities in the Electrical Installation Industry

Electrical Installation Technicians are employed to carry out Electrical Installation and service and repair Electrical equipment.

Job prospect for those entering this industry are projected to be excellent. The building and construction industry engage Electrical Installation Technician in the construction of buildings and other structures, alterations, additions, reconstruction, installation and maintenance and repairs of buildings and other structures.

Some of the job opportunities in the Electrical Installation Industry include Electrical Technician in the Hotel industry, working with Electrical contractors, being self-employed as an Electrical wireman and also Servicing and repairs Electrical equipment.

Progression and Further Studies

Graduates on the Certificate in Electrical installation can apply for the National Advanced Certificate in Electrical Installation followed by the Diploma in Mechanical Engineering.

Graduates with a National Diploma in Mechanical Engineering can be accepted in different universities for a degree study in Mechanical Engineering with specialisation such as Plant Maintenance, Manufacturing, Mechatronics etc.

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Assessment Technique (s) including weighting (s)

The Craft Certificate grade is based on a weighted average of all unit result grades. Assessment approach varies from one unit to another. During every unit of study there is a minimum number of continuous assessments which the learner must undertake. This could be in the form of small tests and assignments and research. For the final unit assessments, in most cases a learner will have to sit for both a theory paper which can be multiple choice, structured or a mixture and a practical for skills demonstration.

Work based experience (WBE) is a compulsory unit and is assessed by the supervisor in the work place for full-time learners and through compilation of a portfolio and assessed against the performance criteria for the different elements in the WBE unit for learner on part-time.

To attain the required standard, a minimum of a pass grade must be achieved in all assessments prescribed .

Pass mark for every unit on the programme is 55%.

As per SIT Assessment Policy, the final mark for a unit is made up of 40% of all continuous assessments plus 60% from the results of the final unit assessment (s) and the following grades and corresponding marks are used

Not yet Competent-NYC-0	—	54%
Pass	- P	-55%-69%
Credit or Merit	- M or C	- 70% - 84%
Distinction	- D	- 85%+

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Electrical Installation is closely associated with other parts of the construction industries at all stages, and is equally affected by rapid change in these sectors, including growing environmental trends and requirements.

Entry Criteria

Learners wishing to apply for the Certificate in Electrical Installation must have attained a pass in English, Mathematics and Combined Science or preferably Physics in the National Exams.

Secondary 5 leavers who have followed a special TVET programme from S4 at SIT are eligible to apply for the programme.

Learners credited with this qualification will be able to:

- ⇒ Understand the basic principle of Electrical Installation .
- ⇒ Demonstrate basic knowledge of the installation, maintenance procedures used in the trade of Electrical Installation.
- ⇒ Demonstrate good practices in basic Electrical Installation using all commonly used Electrical hand and power tools in compliance with all relevant health and safety legislation
- ⇒ Exercise appropriate judgement in diagnostics and delivering all services, installations and maintenance processes relating to Electrical Installation.

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- ⇒ Transfer and apply basic theoretical understanding and technical know-how to inspect, diagnose faults, maintain and repair electrical and mechanical malfunctions and bring back to normal operation systems in a wide variety of domestic, applications.
- ⇒ Exercise team work in the workplace,
- ⇒ Determine the function and role of Electrical in society to include an awareness of energy conservation and other ecological concerns.
- ⇒ Identify and work with component parts Electrical equipment.
- ⇒ Work safely and responsibly in the plant environment.

Certification

To be awarded certificate in Certificate in Electrical Installation, the learner must have achieved the expected performance criteria set out in the different elements of each unit that make up the programme. The total credit requirement for this Certificate is 120 Credits .

This qualification is a level 3 on the National Qualification Framework (NQF).

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18 months (3 semesters) for Part-time Candidates and Apprenticeship

Semester 1	Semester 2	Semester 3
Health, Safety and Security Procedures (30/15)	ICT (30/15)	
Refrigeration Systems and Applications (40/20)	Accessories, Auxilliaries and Controls (40/20)	
Engineering, Tools, Instruments and Materials (30/15)	Circuit Diagrams (20/20)	
Refrigeration and Air conditioning Mechanics (20/10)	Room Split Air conditioners (40/40)	
	Troubleshooting and Servicing (60/30)	
	Science (40/20)	
Fundamentals of Refrigeration (20/10)	Electric Motors (20/10)	
	English (20/10)	
	Mathematics (20/10)	
	Technical Drawing (2) (40/20)	
Number of contact hours / Non-contact hours per semester		
Semester one: is of 21 weeks (168 hrs per semester)	Semester two: is of 21 weeks (168 hrs per semester)	Semester 3 is of 21 weeks (168 hrs per semester)
Number of hrs per week = 8hrs		Total contact hours for the programme: 504hrs

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Structure of the Programme (2 semesters) for Full-time learners

Semester 1	Semester 2
Health, Safety and Security Procedures (30/15)	Electrical Motors (30/30)
Refrigeration and Air conditioning Mechanics (20/10)	Circuit Diagrams (20/20)
Engineering Tools, Instrument and Materials (30/15)	Room Split Air conditioners (40/40)
Fundamentals of Refrigeration (20/10)	Troubleshooting and Servicing (60/30)
Refrigeration Systems and Applications (40/20)	Accessories, Auxilliaries and Controls (40/20)
Refrigerants and Lubricants (20/10)	
Electricity (30/30)	
	Information Technology (30/15)
English (20/10)	
Mathematics (20/10)	
Technical Drawing 1 (20/10)	Technical Drawing 2 (20/10)
Work Based Experience (W.B.E rotation 1) (210)	Work Based Experience (W.B.E rotation 2) (210)
Number of contact hours / Non-contact hours per semester	
Semester one: 250/140 (390) Notional Hours (250+140+210) = 600	Semester two: 230/160 (390) Notional Hours (230+160+210) = 600
Total hours for the programme: 1200	
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Certificate in Refrigeration and Air conditioning

Books and References for Study

A number of publications are available for the study and training in the Certificate in Electrical Installation. They are books which are regularly updated with new editions. Learners are advised to identify the latest editions.

The following are available in the SIT library and can be borrowed for study and reference:

Journals and Articles on Electrical Installation can be accessed on-line via the internet using google. Computers with Internet access are available for research are also available in the SIT Library.

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List of Statements of Competencies for Certificate in Electrical Installation

Statement of competency	Unit title	Semester (s) involved	Number of Credits
Apply Health, Safety and Security Procedures	Health, Safety and Security Procedures	1	4.5
Analyse the occupation of a Refrigeration and Air conditioning mechanic in the context of Seychelles	Refrigeration and Air conditioning Mechanics	1	3.0
Apply principles and practice of use, maintenance and storing of engineering tools, instruments and pipework materials in the context of Refrigeration and Air conditioning	Engineering Tools, Instrument and Materials	1	4.5
Apply knowledge of the Fundamental Principles of Refrigeration	Fundamentals of Refrigeration	1	3.0
Use oral and written English in the context of Refrigeration and air conditioning	English	1	3.0
Demonstrate knowledge of and practice on Refrigeration Systems and Applications	Refrigeration Systems and Applications	1	6.0
Apply knowledge, and practice in handling refrigerants and lubricants in Refrigeration and Air conditioning units	Refrigerants and Lubricants		3.0
Apply principles and practice of Mathematics	Mathematics	1	3.0
Apply principles and practice of electricity in the context of Refrigeration and Air conditioning.	Electricity	1	6.0
Apply principles and practice of Technical Drawing	Technical Drawing	1,2	6.0
Demonstrate knowledge and practice of collaborative skill work in refrigeration and Air conditioning on Work based Experience	Work Based experience (WBE)	1,2	42.0

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Use Information and Communication Technology skills (ICT) in the context of Refrigeration and air conditioning	Information and Communication Technology (ICT)	2	3.0
Demonstrate knowledge and practice of Circuit Diagrams in refrigeration and air conditioning	Circuit Diagrams	2	4.0
Demonstrate knowledge and practice on electric motors in Refrigeration and Air conditioning.	Electric Motors	2	6.0
Demonstrate knowledge and practice installing, and commissioning room split-type air conditioners	Room Split Air conditioners	2	8.0
Demonstrate knowledge and practice in troubleshooting and servicing refrigeration and air conditioning systems	Troubleshooting and Servicing	2	9.0
Demonstrate knowledge of the functions and practice installing, fixing and storing accessories, auxiliaries and controls on Refrigeration and Air conditioning systems	Accessories, Auxiliaries and Controls	2	6.0
Total Number of Credits =			120