Advanced Certificate in Electrical Installation

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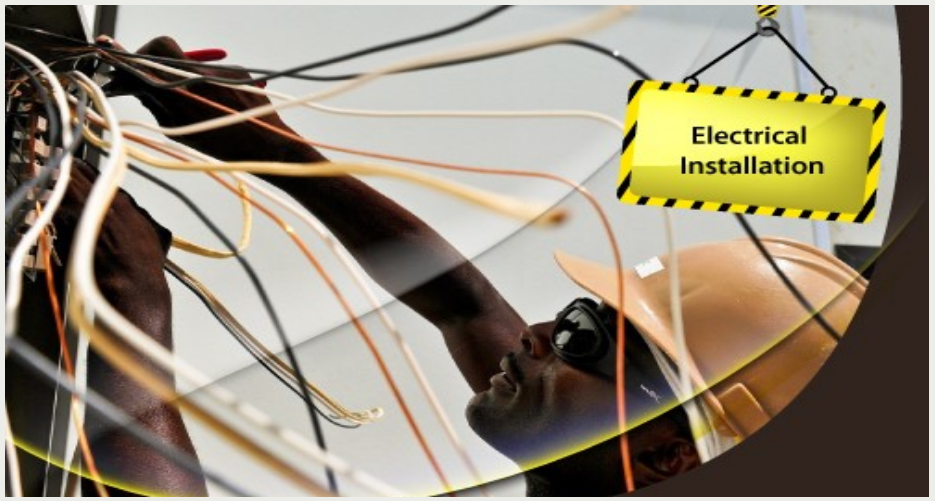
Advanced Certificate in Electrical Installation.

TVET PROGRAMME



Purpose

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

This qualification enables a competent learner at NQF Level 4, under general supervision, to demonstrate a basic ability to install, service, repair and operate electrical equipment that is used in the electrical industry.

Introduction

The Advanced Certificate in Electrical Installation is a two-year (2400hours) training programme offered full-time to secondary five (S5) school leavers and learners from School of Advanced Level (SALs) as well as from another professional centres.

This is equivalent to four (4) semesters. Two semesters represents one academic year. The same programme is also offered on part-time to learners already in employment over 6 semesters. Learners on the part-time come to SIT for lectures 1 1/2 days per week.

A learner on full time may exit after a year and qualify for the Certificate after successfully completing all the units from semesters one and two and accumulated 120 credits.

An Electrical Installation Engineer works on commercial, residential, public and industrial projects, including installing, servicing and maintaining Electrical equipment .

An Electrical Installation engineer generally works inside domestic, commercial or public buildings during and after construction and production, and on projects of all sizes and types.

He or she will plan and design, install, test, commission, report, maintain, fault and repair systems to a high standard. Work organization and self-management, communication and inter-personal skills, problem solving, flexibility and a deep body of knowledge are the universal attributes of the outstanding practitioner.

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Industrial Electrical is very much in demand in Seychelles. Large projects require specialist with experience personals to service and maintain operations of the different types of wiring and maintenance systems.

Progression and Further Studies

Graduates on the Advanced Certificate in Electrical Installation can apply for the National Diploma in Mechanical Engineering followed by the Advanced 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 specialization such as Plant Maintenance, Manufacturing, Mechatronics etc.

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%+

Career Opportunities in the Electrical Installation Industry

Electrical Installation Technicians are employed to install, service and repair Electrical equipment. The Electrical Installation Technician can also work as maintenance personnel on Electrical equipment systems. They install and perform work the different components on these systems.

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 various electrical equipment.

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Electrical Installation is closely associated with other parts of the construction industry 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 Advanced Certificate in Electrical Installation must have attained a minimum grade of "**G**" from the **IGCSE exam** in English, Mathematics and Combined Science or preferably Physics.

Applicants from another professional center may be accepted exiting with a Certificate from that Institution.

Learners credited with this qualification will be able to:

⇒ Understand the basic skills in Electrical Installation and Servicing.

⇒ Demonstrate an in-depth knowledge of the installation, commissioning and maintenance procedures used in the trade of Electrical Installation.

⇒ Demonstrate comprehensive range of specialized Electrical Installation skills using all commonly used Electrician hand and power tools in compliance with all relevant health and safety legislation and best practice.

⇒ Exercise appropriate judgment in planning, diagnostics and delivering all services, installations and maintenance processes relating to Electrical Installation and Servicing.

ventilation

- ⇒ Transfer and apply 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, commercial and industrial applications.
- ⇒ Exercise substantial independence in the workplace, taking responsibility for Electrical Installation duties performed by others and interacting with a variety of individuals and groups to include customers, colleagues and suppliers.
- ⇒ Determine the function and role of an Electrician technician 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 Advanced 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 Advanced Certificate is 240 Credits .

This qualification is a level 4 on the National Qualification Framework (NQF).

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Assessment Technique (s) including weighting (s)

The Advanced 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 .

Learners completing year one may exit with and qualify with a certificate in Electrical Installation if he/she has passed all the units of semesters one and two.

Structure of the Programme for: (4 semesters) for Full-time learners

	Semester 1	Semester 2	Semester 3	Semester 4
1	Health, Safety and Security Procedures **(30/15)**	Basic ICT (30/15)		
2	Domestic Installation (**40/40**)	Domestic Installation (90/45)	Domestic Installation (40/40)	Industrial Installation (55/55)
3	Tools, equipment and instruments **(20/20)**	Electrical Servicing (30/15)		Electrical Servicing (40/40)
4	Electrician Occupation in the context of Seychelles (20/10)	Electrical Distribution 1 (30/15)	Earthing (40/20)	
5		Inspection and Testing (1) (30/30)	Electrical Wiring & Regulation (40/20)	Renewable Energy Sources (20/20)
6	Electrical Fundamentals (40/20)		Electronics Fundamentals (30/15)	
7	Material and Components (30/15)	Electric Motors (20/10)		Electric Motors and Control (40/20)
8	Basic English **(20/10)**			
9			Electrical Lighting (40/20)	
10	Basic Mathematics -1 **(20/10)**		Basic Mathematics - 2 **(30/15)**	
11	Basic Technical Drawing Techniques 1 **(20/10)**	Basic Technical Drawing Techniques 2 **(20/10)**	Basic Technical Drawing Techniques 3 **(20/20)**	Basic Technical Drawing Techniques 4 **(20/10)**
12	Work Based Experience (W.B.E rotation 1) **(210)**	Work Based Experience (W.B.E rotation 2) **(210)**	Work Based Experience (W.B.E rotation 3) **(210)**	Work Based Experience (W.B.E rotation 4) **(210)**
	Number of contact hours / Non-contact hours per semester			
	Semester one: 240/150 (390) Notional Hours (240+150+210) = **600**	**Semester one:** 250/140 (390) Notional Hours (240+150+210) = **600**	**Semester one:** 240/150 (390) Notional Hours (240+150+210) = **600**	**Semester one:** 175/145 (320) Notional Hours (175+145+280) = **600**

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Books and References for Study

A number of publications are available for the study and training in the Advanced 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:

Modern Refrigeration and Air conditioning - Athouse, Turnquist and Bracciano
Principles of Refrigeration and Air conditioning - RoyJ.Dossat and Thomas J.Horan
A textbook of Refrigeration and Air conditioning -Er.R.K Rajput
Electricity for Refrigeration , Heating and Air conditioning - Russell. E Smith
Refrigeration and Air conditioning - G.F Hundy, A.R. Trott and T.C Welch.

Journals and Articles on Refrigeration and Air conditioning 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. The following website address can be useful:
https://www.ashrae.org/resources--publications/periodicals/ashrae-journal
https://www.journals.elsevier.com/international-journal-of-refrigeration
http://www.edmgr.com/IJACR

List of Statements of Competencies for Advanced Certificate in Electrical Installation.

Statement of Competencies	Unit title	Semester (s) involved	Number of Credits
Apply Health, Safety and Security Procedures.	Health, Safety and Security Procedures	1	4.5
Demonstrate knowledge and practice of Domestic Installation.	Domestic Installation	1,2,3	40.5
Apply principles and practice of Tools, Equipment and Instruments.	Tools, Equipment and Instruments	1	4.0
Analyse the Occupation of an Electrical Technician in the context of Seychelles.	Electrician Occupation in the context of Seychelles	1	3.0
Demonstrate knowledge and understanding of Electrical Fundamentals.	Electrical Fundamentals	1	3.0
Demonstrate knowledge and understanding of Materials and Components.	Materials and Components.	1	3.0
Use oral and written English.	Basic English	1	3.0
Apply principles and practice of Mathematics.	Basic Mathematics	1,3	3.0
Apply principles and practice of Technical Drawing	Basic Technical Drawing Technics	1,2,3,4	13.0
Apply principles and practice of Information and Communication Technology.	Basic ICT	2	4.5

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Demonstrate knowledge and practice in Electrical Servicing.	Electrical Servicing	2,4	12.5
Demonstrate knowledge and understanding of Electrical Distribution	Electrical Distribution	2	4.5
Demonstrate knowledge and practice of Inspection and Testing	Inspection and Testing	2	6.0
Demonstrate knowledge and practice of Electric Motors	Electric Motors	2,4	9.0
Demonstrate knowledge and practice in Earthing.	Earthing	3	6.0
Demonstrate Knowledge and practice in Electrical Wiring and Regulation.	Electrical Wiring and Regulation.	3	6.0
Demonstrate the knowledge and understanding of Electronics Fundamental	Electronics Fundamental	3	4.5
Demonstrate Knowledge and understanding of Electrical Lighting.	Electrical Lighting	3	6.0
Demonstrate knowledge and understanding of Industrial Installation.	Industrial Installation	4	11.0
Demonstrate Knowledge of Renewable Energy Sources	Renewable Energy Sources	4	4.0
Demonstrate knowledge and skills relevant to Electrical Installation during work based-experience	Work Based Experience	1,2,3,4	91.0
		Total	**240**