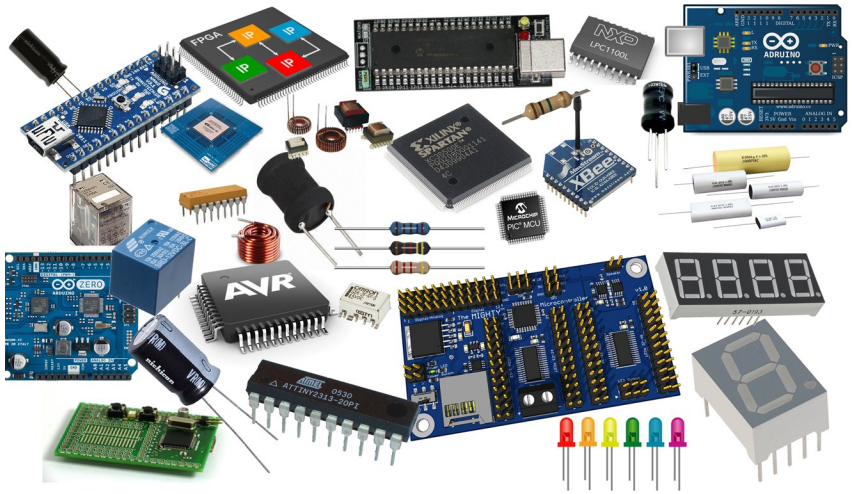
Advanced Certificate in Electrical and Electronics



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SIT
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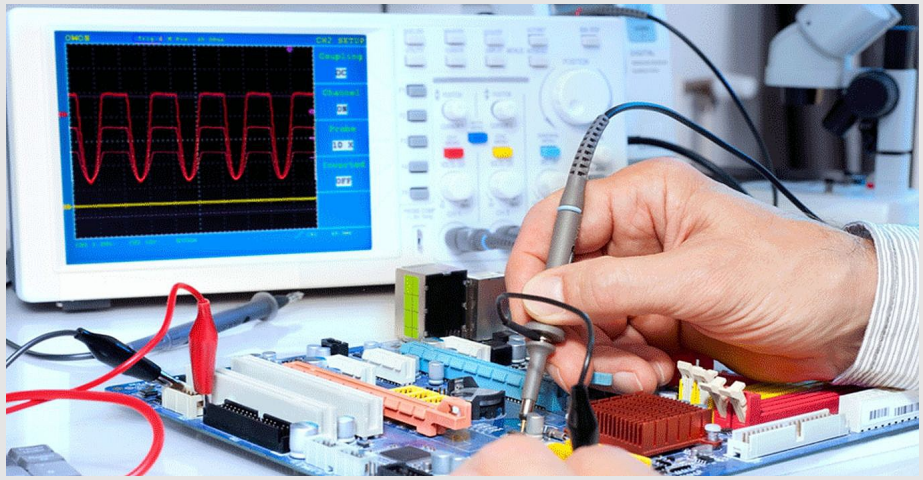
Advanced Certificate in Electrical and Electronics



Purpose

The purpose of this award is to enable the learner to attain the standard required to achieve the Advanced Certificate through the knowledge, skill and attitudes essential in all Electrical and Electronics applications and servicing and expected to perform duties as a trade person in Electrical and Electronics field under general supervision. The person can occupy a post and work as a junior Electrical and Electronics Personnel, servicing and maintenance personnel in the electrical and electronics industry as well as in the electromechanical industry under general supervision. The person can also work as an assistant sales person in specialized Electrical and Electronics service and sales centers.

Advanced Certificate in Electrical and Electronics

Introduction

The Advanced Certificate in Electrical and Electronics 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 Centre. 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 year and qualify for the Certificate after successfully completing all the units from semesters one and two and accumulated 120 credits.

Entry Criteria

Learners wishing to apply for the Advanced Certificate in Plumbing must have attained a minimum grade of "**F**" from the **IGCSE exam** in English, Mathematics and Combined Science or preferably Physics.
Applicants from another Professional Centre may be accepted exiting with a Certificate from that Institution.

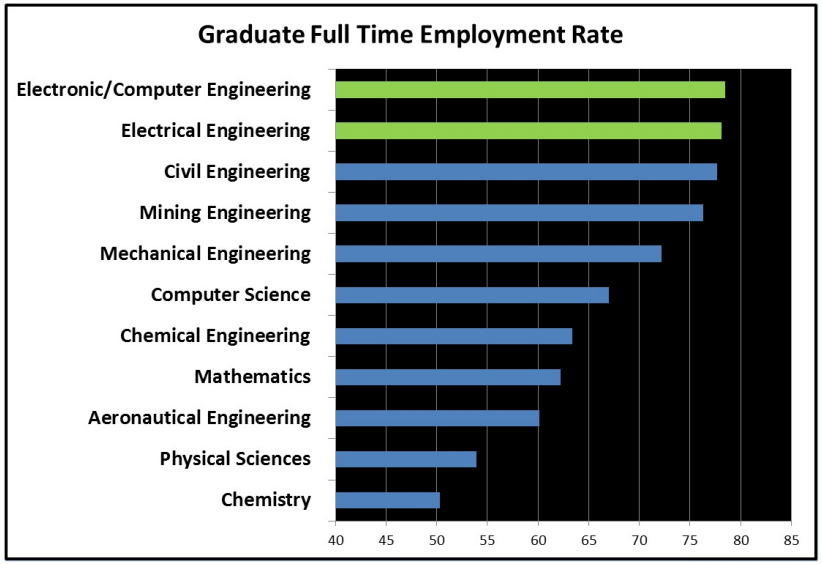
Learners should be able to:

- Make use of best practice based on theory and experience gained throughout training and work based experience.
- Be able to plan and execute work in a safe and responsible manner.

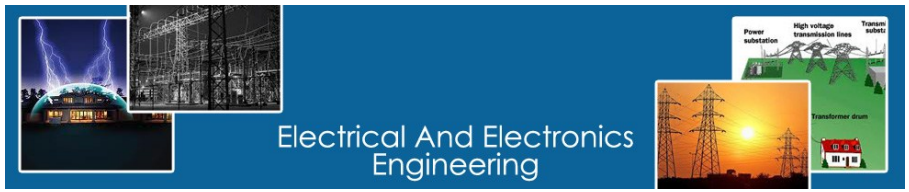
Advanced Certificate in Electrical and Electronics

Learners who successfully complete the programme can be employed at Seychelles Broadcasting Corporation, Ministry of Health, Public Utilities Corporation, Seychelles Port Authority Seychelles Land Transport Authority, Private Telecommunication and engineering firm or start their own Business firms etc...

Career Pathways in the Electrical and Electronics Eng. Sector



(Graduate Careers Australia's (GCA) annual Australian Graduate Survey (AGS))



Career Pathways in the Electrical and Electronics Engineering Sector

Graduates exiting from the programme will possess skills and knowledge in Electrical and Electronics field with specialization in Applications and Servicing . The graduate can occupy a post of technician in the field or even start their own business. A qualified person at the level of Advanced Certificate is expected to perform duties as follows;

- Electrical and Electronics Trainee Serviceman
- Electrical and Electronics Sales Assistant
- Analogue Amplifier Design Engineering Assistant
- Antenna Engineering Assistant
- Audio Engineering Assistant - Electricity and Electronics
- Broadcasting Professional Engineering Assistant
- Circuit Design Engineering Assistant
- Control Systems Engineering Assistant
- Radio and Television Broadcasting Systems Engineering Asst.
- Digital Circuit Design Engineering Assistant
- Low Voltage Equipment Engineering Assistant
- Microelectronics Engineering Assistant
- Process Instrumentation Engineering Assistant
- Radar Engineering Assistant
- Signal Engineering Assistant
- Television Systems Engineering Assistant

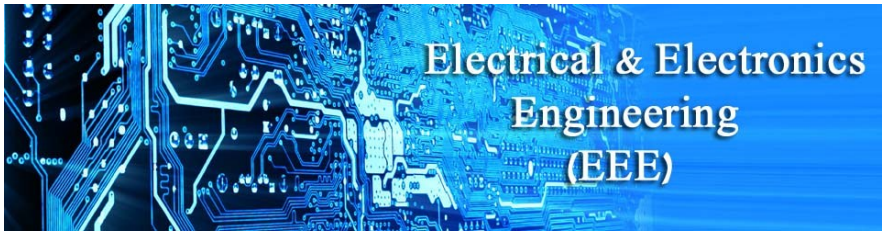
Which allow learners to learn, develop and practise the skills required for employment and/or career progression in the Electrical and Electronics sector contribute to achieving the competence required for Diploma and Advanced Diploma studies.

Advanced Certificate in Electrical and Electronics

- Understand the nature of a problem and seeking assistance through individuals, text or any other means as deemed necessary.
- Be able to access relevant information online
- Be able to collect and present data in an easily understood manner and to analyse the said data in order to remedy or predict situations which arise.
- Have the techniques of communicating information, ideas, problems and solutions with his/her clients, management, colleagues and other persons he/she may be working with.

Certification

To be awarded certificate in Advanced Certificate in Electrical and Electronics, 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).



List of Statements of Competencies

Statement of Competencies	Unit title	Semester Involve	No.of Credits
01) Apply health, safety and security procedures in the context of electrical and electronics engineering	Health, Safety and Security Procedures	1	4.5
02) Demonstrate Knowledge and understanding of scientific principles	Science	1	6.0
03) Apply principles and practice handling, maintain and storing engineering tools, instruments and equipment	Tools, equipment and instruments	1	3.0
04) Demonstrate knowledge of the occupation of electrical and electronics in the context of Seychelles	Electrical and Electronics Occupation in the Context of Seychelles	1	3.0
05) Demonstrate knowledge of the fundamentals of electrical and electronics	Electrical and Electronic Fundamentals	1,3	8.5
06) Demonstrate knowledge and understanding of electrical circuitry	Electrical Circuits	1	4.5
07) Demonstrate knowledge and understanding of electronics components	Electronics Components	1	3.0
08) Use oral and written English	English	1	3.0
09) Demonstrate knowledge of mathematics principles	Mathematics	1,3	7.5
10) Apply principles and practice of technical drawing	Technical Drawing	1,3	6.0
11) Apply principles and practice of Information Technology	Information Communication Technology	2	4.5
12) Demonstrate Knowledge of electrical and electronics applications	Electrical and Electronic Applications	2,3,4	18.0
13) Demonstrate knowledge and applications of Electronic signals	Electronic Signals	2	4.5
14) Demonstrate knowledge and principle of basic digital electronics	Digital Electronics	2,3,4	16.0

Advanced Certificate in Electrical and Electronics

Programme related Study Materials:

- ⇒ **Information Systems Engineering:** From ***Data Analysis to Process Networks*** By Paul Johannesson
- ⇒ **Software Student's Handbook** By Thomas Ledger
- ⇒ **Discovering Computers: *Fundamentals*** By Gary Shelly, Misty Vermaat
- ⇒ **Networking Fundamentals: *Wide, Local and Personal Area Communications*** By Kaveh Pahlavan, Prashant Krishnamurthy
- ⇒ **Fundamentals of Web Development** By Randy Connolly, Ricardo Hoar
- ⇒ **Fiber Optics Installer and Technician Guide** By Bill Woodward, Emile B. Husson
- ⇒ **The Primary ICT & E-learning Co-ordinator's Manual** By James Wright
- ⇒ **The Impact of ICT on Quality of Working Life** edited by Christian Korunka, Peter Hoonakker
- ⇒ **Best Practices for Desktop Publishing** By Sandee Cohen
- ⇒ **Applied ICT for You** By Stephen Doyle
- ⇒ **Fault-Diagnosis Systems: *An Introduction from Fault Detection to Fault Tolerance*** By Rolf Isermann
- ⇒ **Software and Network Engineering** edited by Roger Lee
- ⇒ **Beginning Database Design: *From Novice to Professional*** By Clare Churcher
- ⇒ **Essential Math Skills for Engineers** By Clayton R. Paul
- ⇒ **Troubleshooting Electronic** Equ By Raghbir Singh Khandp
- ⇒ **Digital Design** By R. Ananda Natarajan

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 .

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		- 00 - 54%
Pass	- **P**	- 55 - 69%
Credit /Merit	- **M /C**	- 70 - 84%
Distinction	- **D**	- 85 - 100%

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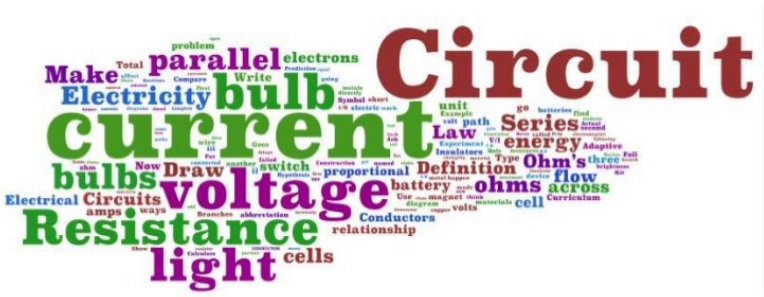
15) Demonstrate knowledge of principles AC and DC supply	A.C and D.C Supply	2,3	7.5
16) Demonstrate knowledge and practice in servicing electrical and electronics equipment	Electrical and Electronics Servicing	2,3,4	25.0
17) Demonstrate knowledge of principles and application of electrical motors	Electrical Motors	2	4.5
18) Apply principles and practice of measuring and the use of instrument	Measurement and Instrumentation	3	3.0
19) Demonstrate knowledge of principles and application of Renewable Energy	Renewable Energy	3	5.0
20) Demonstrate knowledge of basic telecommunication principles	Telecommunication	4	6.0
21) Demonstrate knowledge and application of computer technology	Computer Technology	4	6.0
22) Demonstrate knowledge and practical skills relevant to Electrical & Electronics during work based-experience	Work Based Experience	1,2,3,4,	91.0
		Total number of credits	240



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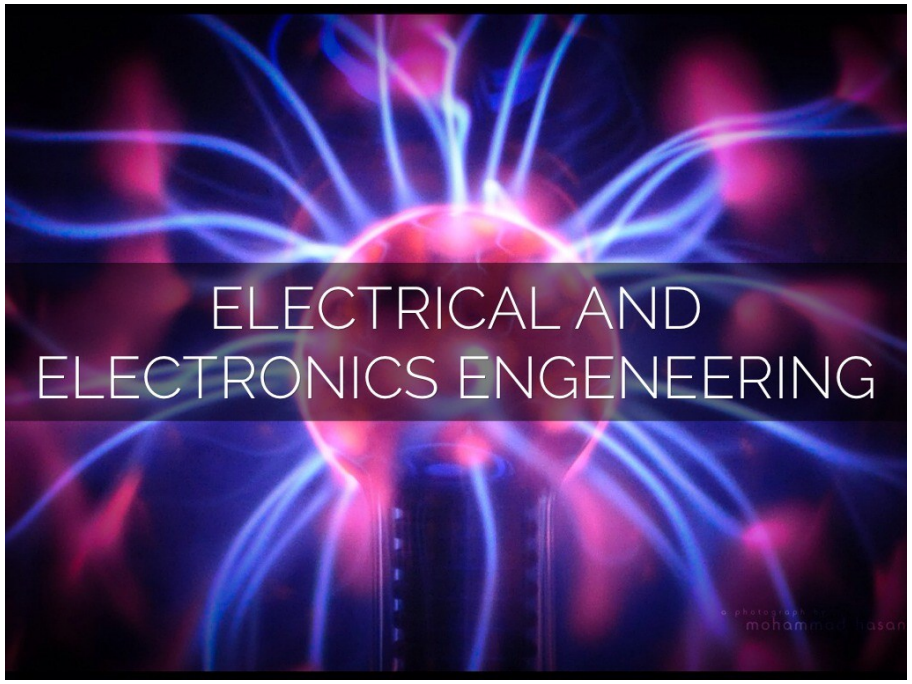
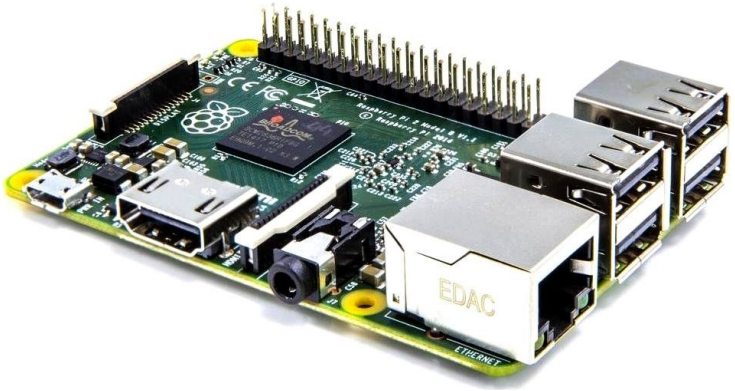
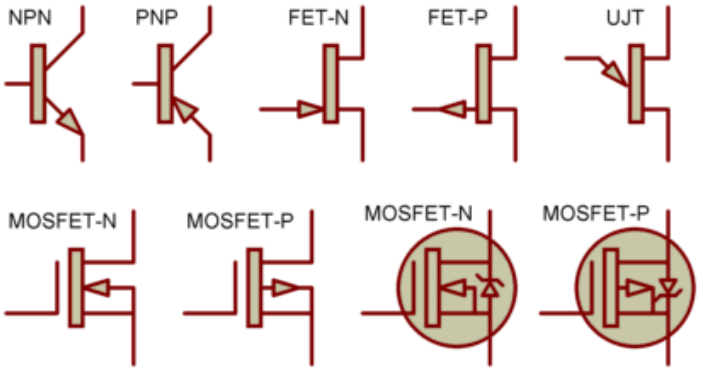
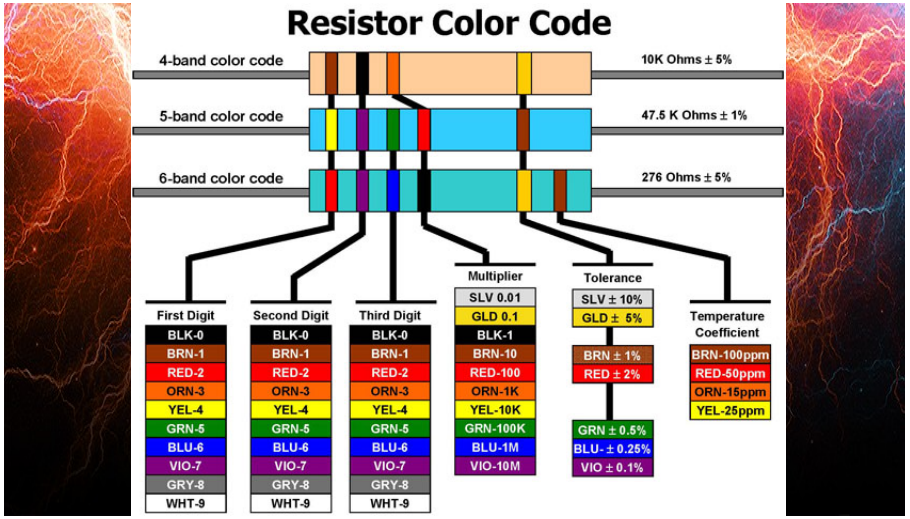
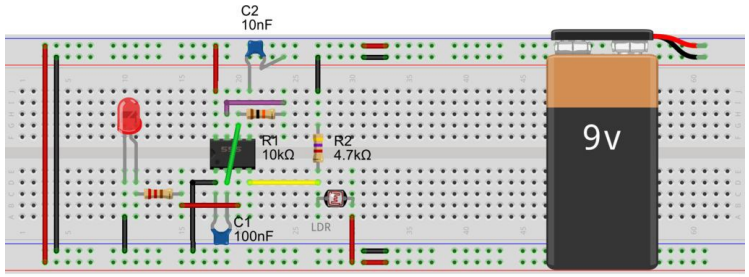
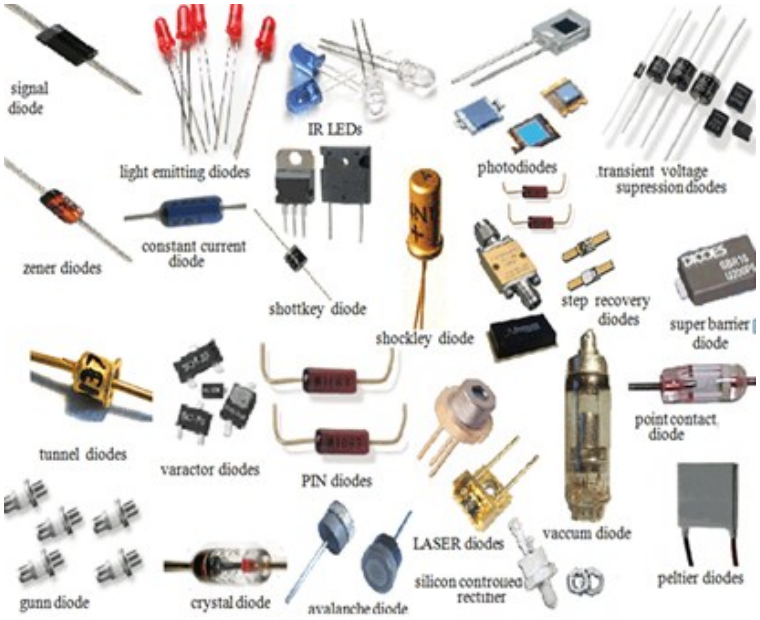




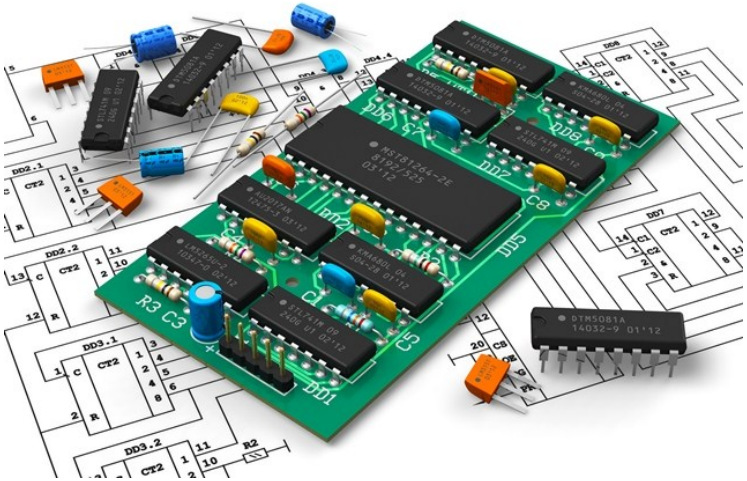


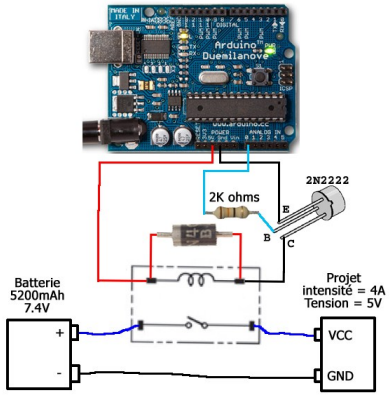


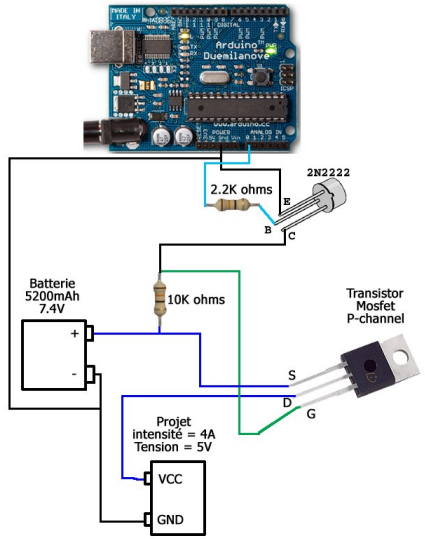




Types of Diode







Logic Diagram/Unit Table (Full-time) - Advanced Certificate in Electrical and Electronics

	Semester 1	Semester 2
01	**Health, Safety and Security Procedures** (30/15)	**Electrical & Electronics Application** (40/20)
02	**Science** (40/20)	**Electrical & Electronics Servicing** (60/30)
03	**Tools, Equipment and Instruments** (20/10)	**Digital Electronics** (40/20)
04	**Electrical and Electonics - Occupation in the context of Seychelles** (20/10)	**AC and DC Supply** (30/15)
05	**Electrical and Electronics fundamentals** (30/15)	**Electronic Signals** (30/15)
06	**Electrical Circuits** (30/15)	**Electric Motors** (30/15)
07	**Electronics Components** (20/10)	**ICT** (30/15)
08	**Mathematics / English** (30/15) / (20/10)	
09	**Technical Drawing 1** (20/10)	
WB	**Work Based Experience (WBE rotation - 1)** (210)	**Work Based Experience (WBE rotation - 2)** (210)
C/N	**Number of contact hours/ Non-contact hours per semester**	
NH	**Semester one:** 260/130 (390) Notional Hours **(260+130+210) = 600**	**Semester two:** 260/130 (390) Notional Hours **(260+130+210) = 600**
TH	**Total hours for the year one of programme: 1200**	

	Semester 3	Semester 4
01	**Electrical & Electronics Application** (30/30)	**Electrical & Electronics Application** (30/30)
02	**Electrical & Electronics Servicing** (40/40)	**Electrical & Electronics Servicing** (40/40)
03	**Digital Electronics** (20/20)	**Digital Electronics** (30/30)
04	**AC and DC Supply** (20/10)	**Telecommunication** (40/20)
05	**Electrical and Electronics fundamentals** (20/20)	**Computer Technology** (40/20)
06	**Measurement & Instrumentation** (20/10)	
07	**Renewable Energy** (30/20)	
08	**Mathematics** (20/10)	
09	**Technical Drawing 2** (20/10)	
WB	**Work Based Experience (WBE rotation - 3)** (210)	**Work Based Experience (WBE rotation - 4)** (280)
C/N	**Number of contact hours/ Non-contact hours per semester**	
NH	**Semester one:** 220/170 (390) Notional Hours **(220+170+210) = 600**	**Semester two:** 180/140 (320) Notional Hours **(180+140+280) = 600**
TH	**Total hours for the year one of programme: 1200**	

00 = Number of Module per Semester | * WB = Work Based Attachment | C/N = Contact Hours / Non- Contact Hours | NH = Notational Hours | TH = Total Learning Hours per Annum