National Diploma in Information Systems Engineering

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SIT
Seychelles
Institute of Technology

**National Diploma in
Information Systems Engineering**

Purpose

This newly developed programme is written using the competency based approached (CBA). It is aimed at providing both the theoretical principles in information technology as well as the necessary prerequisite/skills/competencies to the graduates which will enable them to work with confidence with a certain degree of autonomy and some responsibility for the supervision of others. The graduates would be more suited to be employed a technical personal in the field of work. The high demand in the IT industry today is more practically oriented in different fields such as Network Engineering, Multimedia Designers and Software Developers, Telecommunication etc…
Also there is boom in the IT Industry.

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Introduction

The National Diploma in Information Systems Engineering is a Three-year (3600hours) 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 (6) semesters. Two semesters represents one academic year. The same programme is also offered on part-time to learners already in employment over 8 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 "**C**" from the **IGCSE exam** in English, Mathematics and Combined Science or preferably Physics/ ICT.
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.

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

Career Pathways in the Information System Engineering Sector

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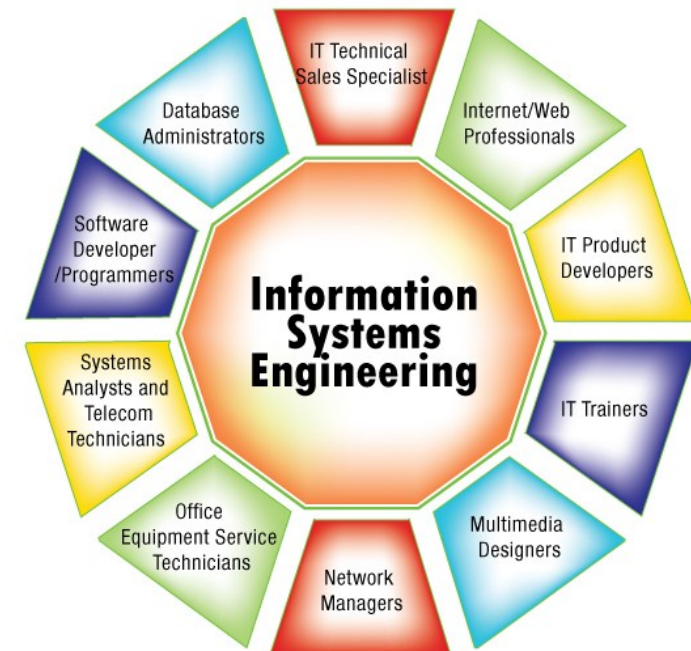
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Career Pathways in the Information System Engineering Sector

Graduates exiting from the programme will possess skills and knowledge in IT Industry with specialization in Network Engineering, Multimedia Design and Software Development. Graduates would also poses basic practical skills in Telecommunication Industry. The graduate can occupy a post of technician in the field or even start their own business. A qualified person at the level of National diploma is expected to perform duties as follows;

- Database Administrators
- Internet/Web Professionals
- IT Product Developers
- IT Technical Sales Specialist
- IT Trainers
- Multimedia Designers
- Network Managers
- Office Equipment Service Technicians
- Software Developer/Programmers
- Systems Analysts and Telecommunications Technicians

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

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- 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 National Diploma in Information Systems Engineering, 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 National Diploma is 360 Credits .
This qualification is a level 5 on the National Qualification Framework (NQF).

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List of Statements of Competencies

Statement of Competencies	Unit title	Semester Involve	No.of Credits
01) Apply principles and practices of Improving productivity using IT	Improving productivity using IT	1	9.0
02) Apply Health, Safety and Security Procedures in the field of ICT	Health, Safety and Security in ICT	1	6.0
03) Analyse the ICT Professional - Occupation in the context of Seychelles	ICT Professional - Occupation in the context of Seychelles	1	9.0
04) Maintain Interpersonal and written communication	Interpersonal and written communication	1	7.5
05) Demonstrate understanding of ICT fundamentals	ICT fundamentals	2	24.0
06) Apply Principles and practices of software installation and upgrade	Software installation and upgrade	1	12.0
07) Apply principles and practice of Mathematics for ICT	Mathematics for ICT	2	15.0
08) Execute all activities related to installation of ICT hardware and equipment	Working with ICT hardware and equipment	2	6.0
09) Execute all activities related to testing of ICT systems	Testing ICT Systems	1	4.5
10) Demonstrate knowledge and practice in Desktop Publishing	Desktop Publishing	1	9.0
11) Demonstrate knowledge and understanding of Network Fundamentals	Networking fundamentals	2	9.0
12)Execute all activities related to Customer care in ICT	Customer care in ICT	2	6.0
13) Demonstrate understanding of own effectiveness and professionalism	Develop own effectiveness and professionalism	2	6.0
14) Apply principles and practices of IT systems development	Introduction to IT systems development	1	12.0

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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 National Diploma 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%

15) Apply principles and practices of Digital image editing	Digital image editing	1	12.0
16) Apply principles and practices of Web designing	Web designing	2	12.0
17) Apply principles and practices of Technical fault diagnosis	Technical fault diagnosis	3	9.0
18) Apply principles and practices of Electronic Servicing	Electronic Servicing	3	12.0
19) Demonstrate understanding of Web development fundamentals	Web development fundamentals	3	12.0
20) Apply principles and practices of Digital designs	Digital designing	4	12.0
21) Apply principles and practices of Database designs	Database designing	3	12.0
22) Demonstrate understanding of Software development fundamentals	Software development fundamentals		9.0
23) Demonstrate understanding of Fibre Telecommunications Techniques	Fibre Telecommunications Techniques	4	4.5
24) Demonstrate understanding of Entrepreneurship	Entrepreneurship	3	4.5
25) Demonstrate knowledge and skills relevant to Information Systems Engineering during work Based-Experience	Work-Based Experience	3	126.0
		Total number of credits	360

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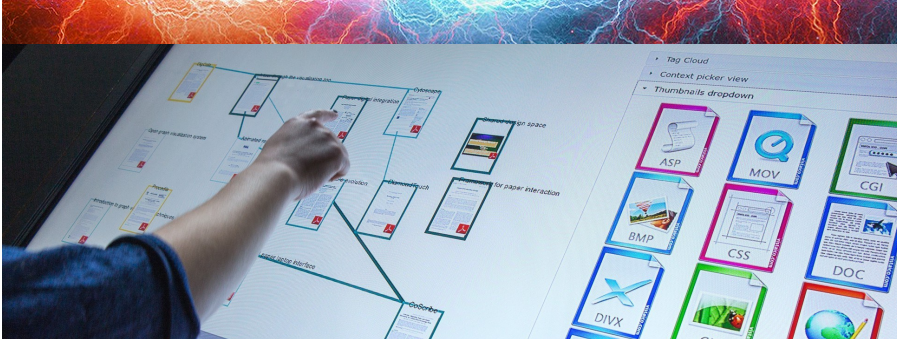
Systems Engineering (8 semesters) for Part-time candidate

	Semester 5	Semester 6	Semester 7	Semester 8
...g -	Digital image editing - Level2 **(80/40)**	Develop own effectiveness and professionalism – Level2 **(40/20)**	Database Design **(80/40)**	Software development fundamentals - Level2 **(60/30)**
	Web development fundamentals - Level 1 **(80/40)**	Digital Designing - Level 1 **(80/40)**	Web Designing - Level2 **(80/40)**	Electronic Servicing- Level3 **(100/50)**
...g -	Introduction to IT systems development **(40/20)**	Web development fundamentals - Level2 **(80/40)**	Software development fundamentals - Level1| **(60/30)**	Fibre Telecommunications Techniques **(60/30)**
... –	Networking fundamentals- Level2 **(80/40)**	ICT fundamentals – Level3 **(40/20)**	Digital Designing - Level 2 **(60/30)**	Entrepreneurship **(60/30)**
		Electronic Servicing- Level2 **(40/20)**		

/ Non-contact hours per semester

	per week **(14/7)**	per week **(14/7)**	per week **(14/7)**	per week **(14/7)**
...0	Semester five: Notional Hours **(280+140) = 420**	Semester six: Notional Hours **(280+140) = 420**	Semester seven: Notional Hours **(280+140) = 420**	Semester eight: Notional Hours **(280+140) = 420**
	Portfolio Assignment 03 **(60)**		Portfolio Assignment 04 **(60)**	
...ne:	Total hours for the year three of programme: **(500 + 400) = 900**		Total hours for the year four of Programme: **(500 + 400) = 900**	

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Structure of the Programme for: National Diploma in Information

	Semester 1	Semester 2	Semester 3	Semester 4
01	Improving productivity using IT **(60/30)**	Software installation and upgrade **(80/40)**	Working with ICT hardware and equipment **(40/20)**	Digital image editing Level1 **(80/40)**
02	Health and Safety in ICT **(40/20)**	Testing ICT systems **(30/15)**	Technical fault diagnosis **(60/30)**	Web Designing - Level1 **(80/40)**
03	ICT Professional - Occupation in the context of Seychelles **(60/30)**	Interpersonal and written communication **(50/25)**	Develop own effectiveness and professionalism – Level1 **(40/20)**	Electronic Servicing Level1 **(80/40)**
04	Customer care in ICT **(40/20)**	ICT fundamentals – Level1 **(80/40)**	Networking fundamentals- Level1 **(60/30)**	ICT fundamentals Level2 **(40/20)**
05	Mathematics for ICT - Level1 **(80/40)**	Mathematics for ICT - Level2 **(40/20)**	Desktop publishing **(80/40)**	
				Number of contact hours
	Per week **(14/7)**	per week **(14/7)**	per week **(14/7)**	per week **(14/7)**
2000 Hours	Semester one: Notional Hours **(280+140) = 420**	Semester two: Notional Hours **(280+140) = 420**	Semester three: Notional Hours **(280+140) = 420**	Semester four: Notional Hours **(280+140) = 420**
1600 Hours	Portfolio Assignment 01 **(60)**		Portfolio Assignment 02 **(60)**	
3600 Hours	**Total hours for the year one of Programme: (500 + 400) = 900**		**Total hours for the year two of programme (500 + 400) = 900**	

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Structure of the Programme for: National Diploma in Information Systems Engineering (6 semesters) for Full-time candidate

	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
01	Improving productivity using IT **(60/30)**	Working with ICT hardware and equipment **(40/20)**	Customer care in ICT **(40/20)**	Introduction to IT systems development – Level2 **(40/20)**	Digital Designing **(80/40)**	Fibre Telecommunications Techniques **(30/15)**
02	Health and Safety in ICT **(40/20)**	Testing ICT systems **(30/15)**	Develop own effectiveness and professionalism – Level1 **(20/10)**	Technical fault diagnosis **(60/30)**	Database Designing **(80/40)**	Develop own effectiveness and professionalism – Level2 **(20/10)**
03	ICT Professional - Occupation in the context of Seychelles **(60/30)**	Desktop publishing **(60/30)**	Introduction to IT systems development – Level1 **(40/20)**	Electronic Servicing-Level1 **(40/20)**	Electronic Servicing-Level2 **(40/20)**	Entrepreneurship **(30/15)**
04	Interpersonal and written communication **(50/25)**	Networking fundamentals **(60/30)**	Digital Image Editing **(80/40)**	Web development fundamentals **(80/40)**	Software development fundamentals **(60/30)**	ICT fundamentals – Level3 **(40/20)**
05	ICT fundamentals – Level1 **(50/25)**	ICT fundamentals – Level1 **(30/15)**	Website Designing **(80/40)**	ICT fundamentals – Level2 **(40/20)**		
06	Software installation and upgrade **(80/40)**	Mathematics for ICT **(40/20)**				
07	Mathematics for ICT **(60/30)**					
10		Work Based Experience (WBE rotation 1) **(210)**	Work Based Experience (WBE rotation 2) **(210)**	Work Based Experience (WBE rotation 3) **(210)**	Work Based Experience (WBE rotation 4) **(210)**	Work Based Experience (WBE rotation 5) **(420)**
	Number of contact hours/ Non-contact hours per semester					
	Semester one: 400/200 (600) Notional Hours **(400+200) = 600**	Semester one: 260/130 (390) Notional Hours **(260+130+210) = 600**	Semester one: 260/130 (390) Notional Hours **(260+130+210) = 600**	Semester one: 260/130 (390) Notional Hours **(260+130+210) = 600**	Semester one: 260/130 (390) Notional Hours **(260+130+210) = 600**	Semester one: 120/60 (180) Notional Hours **(120+60+420) = 600**
	Total hours for the year one of programme: 1200		**Total hours for the year one of programme: 1200**		**Total hours for the year one of programme: 1200**	