TECHNICAL &
VOCATIONAL
EDUCATION &
TRAINING

National Competency Standard for Information Technology
Standard Code: SOC25S18V1

Key for coding

DESCRIPTION	REPRESENTED BY
Industry Sector as per ESC (Three letters)	Construction Sector (**CON**) Fisheries and Agriculture Sector (**FNA**) Transport sector (**TRN**) Tourism Sector (**TOU**) Social Sector (**SOC**) Foundation (**FOU**)
Competency Standard	**S**
Occupation within industry Sector	**Two digits 01-99**
Unit	**U**
Common Competency	**1**
Core Competency	**2**
Optional/ Elective Competency	**3**
Assessment Resources Materials	**A**
Learning Resources Materials	**L**
Curricula	**C**
Qualification	**Q1, Q2 etc**
MNQF level of Qualification	**L1, L2 etc**
Version Number	**V1, V2 etc**
Year of endorsement of standard, qualification	**By two digits Example- 07**

1. Endorsement Application for Qualification 01		
2. NATIONAL CERTIFICATE III IN INFORMATION TECHNOLOGY		

3.Qualification code: SOC25SQ1L118	**Total Number of Credits: 10**

4. Purpose of the qualification

Holder of this qualification is to be recognized as a quality individual, possessing the skills and knowledge required to work as a Trainer for Digital Learning Environment.

5. Regulations for the qualification	National Certificate I in Information Technology will be awarded to those who are competent in units 1+2+3+4+5+6

6. Schedule of Units

Unit Title	Unit Title	Code
	LEVEL 1	
1.	Introduction to IT	SOC25S1U01V1
2.	Computer Hardware and Software	SOC25S1U02V1
3.	Virtualization	SOC25S1U03V1
4.	Open source Applications	SOC25S1U04V1
5.	Computer Networking	SOC25S1U05V1
6.	Digital Education	SOC25S1U06V1

7.Accreditation Requirements	The training provider should have the training facility to provide the trainees with hands-on experience related to this qualification
8. Recommended Sequencing	As appearing under the section 06

Packaging of National Qualifications:

National Certificate I in Information Technology will be awarded to those who are competent in units 1+2+3+4+5+6

Qualification Code: SOC25SQ1L118

DESCRIPTION OF AN IT TECHNICIAN LEVEL 1

Information Technology (IT) Level 1 enables the course participants to provide front line technical support to teachers and lectures in teaching field. In addition, this course is also suitable for teachers and lectures that use digital learning techniques in their carrier. Upon completion of this course, they are expected to work individually.

Skills & Interests

Holder of IT certificate level 1 need to be:

- Competent and confident users of IT, with a good knowledge of computers and Tablets,

- Familiar with a range of windows software and Android Apps,

- Good at solving problems,

- Able to explain common technical issues clearly,

- Familiar with different operating systems

COMPETENCY STANDARD DEVELOPMENT PROCESS

The competencies were determined based on the analysis of the tasks expected to be performed by the Trainer of a digital learning environment, and depending on the situation, the candidate will be able to provide basic technical assistance for a Digital Learning Environment. The task analysis was based on the existing job descriptions used in both private and public sector. Competency standards used for similar type of training in other countries were also examined.

Unit 01

Unit Title	Introduction to Information Technology					
Descriptor	This unit defines the competencies required to understand the Information Technology field.					
Code	SOC25S1U01V1	Level	1		Credit	1

ELEMENTS OF COMPETENCIES	PERFORMANCE CRITERIA
1. Evolution of Modern Technology	1.1 Explain how ancient people managed their life without IT and how and when the modern IT concept was build 1.2 List the importance of IT in everyday life 1.3 Identify new technologies and discuss how to implement those updates to an organization
2. 5 generations of computer	2.1 Demonstrate 5 generations of computer and the difference between each generation 2.2 Illustrate a brief timeline about computer generations
3. Types of Computers	3.1 Explain main types of computers 3.2 List the main difference between types of computers
4. Uses of Computers	4.1 Describe the uses of different types of computers in different fields

Range Statement Key player

May include but are not limited to: Information Technology organizations, vendors of IT products and services, IT professional bodies, industry publications and Government Departments involved in IT industry promotion, employer organizations, and relevant unions.

Competency Standard for Information Technology

Clients

Variables may include but are not limited to: internal and external customers, students, employers and employees.

Information Technology Department

The structure of the Information Technology department may be a separate branch, department, division or an integrated function of an organisation.

Organizational

Size and type of organisation and Organizational values and culture may vary.

Information Technology Components

Can include hardware, software and communications packages.

Client user

May be a department within an organisation or a third party and so the relationship and ease of access will vary.

Documentation and Reporting

Audit trails, naming standards, version control.

Organizational Standards

May be based upon formal, well-documented methodologies, or non-existent. For training delivery purposes, best practice examples from industry will be used.

Competency Standard for Information Technology

Assessment Guide Forms of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects for Assessment

Assessment must confirm the following:

✓ Ability to assimilate into the Information Technology department by demonstrating Organizational values through the Organizational code of conduct in work place interactions.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
• How IT was introduced • Remarkable events in history of Information Technology • List types of computers • List different types of computers and their uses	• Identify devices that belongs to different generations • Identify uses of different types of computers

Unit 02

Unit Title	Computer Hardware and Software				
Descriptor	This unit defines the competencies required to Understand computer Hardware and Software				
Code	SOC25S1U02V1	Level	1	Credit	2

Element of competencies	Performance Criteria
1. Understanding types of computer devices	**1.1.** Able to list main hardware categories **1.2.** Able to relate hardware to its respective category
2. Identify hardware specification	**2.1.** Explain the measurements used to measure hardware **2.2.** Describe hardware specification
3. Assembling a Computer System	**3.1.** Precautions are taken before assembling **3.2.** Able to handle Hardware appropriately **3.3.** Assembling the system in right order
4. Types of Software	4.1 Describe the main types of software 4.2 Explain the uses of each type
5. Difference between types of software	5.1 Explain the difference between software types 5.2 Understand the use of different languages in creating different types of software
6. Installing OS	6.1 Explain situations that needs to install an OS 6.2 Properly prepared to install OS 6.3 Successfully installed an OS to Virtual Box
7. Installing Drivers	7.1 Explain the role of Drives 7.2 Explain the reason that some drivers are not required to be installed by the user after installing OS 7.3 Demonstrate manual installation of drivers
8. Installing Software	8.1 Illustrate the validity of a software. 8.2 Precautions are taken before installing software 8.3 Able to finding the right version of a software for a given OS 8.4 Successfully installed the software

Range Statement

Variables may include but are not limited to: Have a clear understanding on computer hardware and software. Distinguish between various types of Hardware and software and their functions. Ability to categorize hardware and software and measure the capability of them. Assembling a desktop computer system, installing OS, Drivers and other software.

Operating Systems

Graphical User Interface (Windows, Linux)

Organizational Standards

For t r a i n i n g delivery purposes, best practice examples from industry will be used.

Assessment Guide Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Assessment must confirm the following:

- ✓ Fully understands the computer hardware and software

- ✓ Able to assemble a desktop

- ✓ Able to installing an OS along with drivers and other application software.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
• What is virtualization and how important it is to our daily life. • Some areas currently use virtualization • Difference between using traditional methods and virtualization methods • Health and safety measurements that need to sustain in a Digital Learning environment	• Able to illustrate the difference between traditional methods and virtualization methods • Uses health and safety measurements in a Digital Learning environment

Unit 03

Unit Title	Virtualization				
Descriptor	This unit defines the competency required to understand how virtualization changed the way things was done				
Code	SOC25S1U03V1	Level	1	Credit	2

Element of competencies	Performance Criteria
1. Understanding virtualization	1.1 Explained the history of Virtualization 1.2 Clarified the purpose of virtualization 1.3 Demonstrated how virtualization works
2. Understanding Cloud Computing	2.1 Explained reasons behind emerge of Cloud Computing 2.2 Clarified the purpose of Cloud Computing 2.3 Demonstrated how cloud computing works
3. Uses of virtualization	3.1 Described the main advantages and disadvantages of virtualization 3.2 Demonstrated application of virtualization in real world situations
4. Types of Virtualization	4.1 Main types of virtualization are demonstrated 4.2 Able to differentiate application of each type in real world situations
5. Installing Virtual Application	5.1 Identify some virtual applications 5.2 Checked pre-requisites before installing virtual application 5.3 Successfully installed and configured a virtual machine

Range Statement

By the end of the unit, the candidate must have a deep understanding on virtual environment and cloud computing. Candidate must be able to explain the main concepts of virtualization and cloud computing and be able to identify and install a virtual application.

Hardware

Personal computers or Laptops.

Software

Variables may include but are not limited to: VM Ware and Virtual Box.

Assessment Guide Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of Assessment

Assessment must confirm the following:

✓ Fully understands virtualization and cloud computing concept

✓ How to apply it to an educational environment.

✓ Able to install virtual applications and do the required setting.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge	Underpinning Skills
• Basic knowledge of virtualization • Basic knowledge of Cloud Computing • Understand when to use virtualization • List main types of virtualization and its use • List prerequisites before installing a virtual machine • Knowledge on how to install a virtual machine	• Able to figure out whether the system is eligible to install a virtual machine • Able to install virtual machine

Unit 04

Unit Title	Open source Applications				
Descriptor	This unit defines the competency required to understand the concept behind Open source and how to install an Open source application				
Code	SOC25S1U04V1	Level	1	Credit	2

Element of competencies	Performance Criteria
1. Linux and Open source applications	**1.1** Explained the relation between Linux and Open source applications **1.2** Explained how Open source applications expended and established in software market **1.3** Described Linux File System
2. Pros and Cons of Open source applications	**2.1** Explained the advantages and disadvantages of Open source applications **2.2** Identified ways to overcome the disadvantages
3. Android systems	3.1 Android system are defined 3.2 Briefly explained how Android systems works 3.3 Well defined the difference between android systems of various tablets
4. Installing Android OS to Virtual Box	4.1 Searched and identified compatible Android OS for a given system 4.2 Downloaded and checked for errors in Android OS 4.3 Successfully installed Android OS to virtual Box
5. Understanding Basic settings of Android	5.1 Explored main features of Android System 5.2 Explained basic settings of Android System 5.3 Demonstrated how to change system settings
6. Installing and uninstalling apps to android	6.1 Identified compatible app for the installed Android OS 6.2 Identified and downloaded APK files from other websites 6.3 Searched and installed apps from Google Play Store 6.4 Uninstalled apps from tablet

Range Statement

This unit focuses on candidate's understanding on Open Source applications and ability to install android OS and another Open source OS. Also, the candidate must be able to do the basic setting of android system and installing/uninstalling apps to android system.

Hardware

Variables may include but are not limited to personal computers, laptops and Tablets.

Software

Variables may include but are not limited to: Open source applications, Android OS, Ubuntu, apk apps.

Assessment Guide Form
of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Assessment must confirm the following:

✓ Ability to identify appropriate OS and install it to the Tablet.

✓ Able to point out main features and basic settings of an android system.

✓ Identify appropriate apk applications and install it to the Tablet.

UNDERPINNING KNOWLEDGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
• General understanding on Open source applications • Understand basic structure of Linux file system • Explain how android systems work • Determine the compatibility of apps and Android OS • Able to list some important settings of Android system	• Able to download appropriate Application • Able to install Android OS to virtual machine • Able to navigate through system settings • Able to install android application through Play store and by using .apk files

Unit 05

Unit Title	Computer Networking				
Descriptor	This unit defines the competency required to understand basic concepts of computer network and connecting a device to a network				
Code	SOC25S1U05V1	**Level**	1	**Credit**	2

Element of competencies	Performance Criteria
1. Understanding computer network	**1.1** Illustrated how networks are formed **1.2** Explained how data transfer inside a Network
2. Types of network	**2.1** Categorized main network types **2.2** Explained difference between network types
3. Difference between private and public networks	**3.1** Demonstrated basic concept of private and public networks **3.2** Illustrated how to determine a private and public network
4. Understanding IP addressing	4.1 Clearly defined the IP address 4.2 Explained the uses of IP address 4.3 Illustrated the classes of IP address and their ranges
5. Assigning IP address	5.1 Explained how DHCP distributes IP address 5.2 Demonstrated how to assign IP address manually to PC and Tablet
6. Network Hardware and Tools	6.1 Listed the Hardware and tools of Networking 6.2 Demonstrated the use of Hardware and tools of Networking
7. Crimping	7.1 Illustrated the color arrangement of networking cable 7.2 Demonstrated how to crimp a network cable
8. Connecting to a Network	8.1 Demonstrated how to connect to a network and test the connectivity 8.2 Explained the basic network commands 8.2 Successfully tested the connectivity between devices

Range Statement

This unit focus on understanding computer network of an organization. Different types of network and how the network differs must be understood. The candidate must be able to assign IP address to Computer and Tablets manually. And must be able to crimp an network cable and connect two devices using the cable.

Hardware

variables may include but are not limited to personal computers, Laptops, Tablets, Network Tools.

Software

variables may include but are not limited to: Network simulators

Operating Systems

Command line and Graphical User Interface.

Assessment Guide Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Assessment must confirm the following:

✓ Deep understanding on computer networking.

✓ Able to understand different types of computer network.

✓ Able to connect a system to a network by creating a network cable and assigning a manual IP address.

UNDERPINNING KNIWLEGE AND SKILLS

Underpinning Knowledge includes	Underpinning Skills include
• Basic understanding of computer networks • Understand difference between Private and Public Networks • Understand how IP address are structured • List some Network Hardware and Tools and its use • Able to tell the color code of network cable • Explain the use of basic network commands	• Able to assign different classes of IP address • Able to use different network tools • Able to crimp a network cable • Able to test connectivity between devices

Unit 06

Unit Title	Digital Education				
Descriptor	This unit defines the competency required to understand Digital Learning concept and how to implement a Digital Learning Environment successfully				
Code	SOC25S1U06V1	Level	1	Credit	1

Element of competencies	Performance Criteria
1. Introduction to Digital Learning Environment	**1.1** Explained the basic concept of Digital Learning **1.2** Listed the importance of Digital Learning
2. Advantages and Disadvantages of Digital Learning	**2.1** Explained the positive and negative effects of implementing digital learning environment **2.2** Identified the effort need to put to make Digital Learning successful
3. Using G suit for education	**3.1** Explored and listed main features of different Digital learning platforms **3.2** Listed advantages of using Google platform for Digital Education **3.3** Explored and listed the uses of different educational apps under Google platform **3.4** Successfully downloaded and installed educational apps **3.5** Illustrated the use of various apps in a Digital Learning Environment
4. Troubleshooting	4.1 Identified common issues of a Digital learning environment 4.2 Illustrated the steps in handling an issue 4.3 Asked for additional help in suitable situations 4.4 Appropriately handled an issue through phone 4.5 Clearly identified applications use to troubleshoot 4.6 Demonstrated how to use troubleshooting applications

Range Statement

This unit gives the candidate a clear insight of Digital learning and how can it be run in an organization. Understanding G suit for education and how to use G suit application will be covered along with other similar applications. Troubleshooting Hardware and Software of Tablets in different situations and how to solve the issues will be covered.

Hardware

variables may include but are not limited to personal computers, Laptops and Tablets

Operating Systems

Command line and Graphical User Interface

Workplace environment

May involve a Educational environment, or Non-Educational environment

Documentation and Reporting

Make a summary report and submit it to the appropriate person.

Assessment Guide Form of assessment

Continuous assessments together with collected evidence of performance will be suitable for this unit.

Assessment context

Assessment may be done in workplace or a simulated work environment.

Critical aspects of evidence

Assessment must confirm the following:

- ✓ The ability to clarify special features of a digital learning environment which doesn't includes in a traditional learning environment.

- ✓ Advantages of using G suit in education

- ✓ Various applications in G suit and its features

- ✓ Able to identify Tablet Hardware and Software issues

- ✓ Able to apply an appropriate solution according to situation

Underpinning Knowledge and Skills

Underpinning Knowledge includes	Underpinning Skills include
- Understand the basic concept of Digital Learning Environment - List some advantages and disadvantages of Digital learning - A good understanding on different Digital Education platforms - Able to describe how to create a digital learning environment using Google Suites - Understand different apps included in G-suit - Understand common issues of a Digital Learning environment - Have a good knowledge on how to handle a troubleshooting process - Musk know when to seek help from an expert	- Ability to avoid negative effects that may arise in digital learning environment - Able to create a Digital Learning environment from scratch - Able to apply different G-suit Apps according to the situation - Able to handle a troubleshooting session appropriately - Able to explain the situation when seeking help from an expert.