HARDWARE AND NETWORKING SERVICE LEVEL – II

TVET CURRICULUM

Based on December, 2021 Version-IV

Occupational standard (OS)

Preface

The reformed TVET-System is an outcome-based system. It utilizes the needs of the labor market and occupational requirements from the world of work as the benchmark and standard for TVET delivery. The requirements from the world of work are analyzed and documented – taking into account international benchmarking – as occupational standards (OS).

In the reformed TVET-System, curricula and curriculum development play an important role with regard to quality driven comparable TVET-Delivery. The Curricula help to facilitate the training process in a way, that trainees acquire the set of occupational competences (skills, knowledge and attitude) required at the working place and defined in the occupational standards (OS).

This curriculum has been developed by a group of professional experts from different Regional TVET Bureaus, colleges, Industries, Institutes and universities based on the occupational standard for Hardware and Networking Service Level II**.**

The curriculum development process has been actively supported and facilitated by **Ministry of Labor .**

TVET-Program Design

1.1.   TVET-Program Title: Hardware and Networking Service Level II

1.2.   TVET-Program Description

The Program is designed to develop the necessary knowledge, skills and attitude of the trainees to the standard required by the occupation. The contents of this program are in line with the occupational standard. The Trainees who successfully completed the Program will be qualified to work as a **Hardware and Network service supporter II** with competencies elaborated in the respective OS. Graduates of the program will have the required qualification to work in the **Economic Infrastructure** sector in the field of **Hardware and Networking Service.**

The prime objective of this training program is to equip the Trainees with the identified competences specified in the OS. Graduates are therefore expected to operate database application, install and optimize operating system software, administrate network and hardware peripherals, care for network and computer hardware, update and document operational procedures, implement maintenance procedures, maintain equipment and consumables, connect internal hardware components, apply problem solving techniques to routine malfunction, record client support requirements, prevent and eliminate MUDA in accordance with the performance criteria and evidence guide described in the OS.

1.3.   TVET-Program Training Outcomes

The expected outputs of this program are the acquisition and implementation of the following units of competences:

EIS HNS2 01 1221 Operate Database Application

EIS HNS2 02 1221 Install and Optimize Operating System Software

EIS HNS2 03 1221 Administrate Network and Hardware Peripherals

EIS HNS2 04 1221 Implement Maintenance Procedures

EIS HNS2 05 1221 Maintain Equipment and Consumables

EIS HNS2 06 1221 Connect Internal Hardware components

EIS HNS2 07 1221 Apply Problem Solving Techniques to Routine Malfunction

EIS HNS2 08 1221 Care for Network and Computer Hardware

EIS HNS2 09 1221 Update and Document Operational Procedures

EIS HNS2 10 1221 Record Client Support Requirements

EIS HNS2 11 1221 Prevent and Eliminate MUDA

1.4. Duration of the TVET-Program

The Program will have duration of *410 hours* including the on school/ Institution training and on-the-job practice or cooperative training time. Such cooperative training based on realities of the industry, nature of the occupation, location of the TVET institution, and other factors will be considered in the training delivery to ensure that trainees acquire practical and workplace experience.

s.no	Unit competency	TVET Institution training		Cooperative training	Total hours	Remarks
		Theory	Practical			
1.	Connecting Internal Hardware Component	12	14	14	40	
2.	Installing and Optimizes Operating system Software	12	14	14	40	
3.	Operating Database Application	18	22	20	60	
4.	Administrating Network and Hardware Peripherals	12	14	14	40	
5.	Caring for Network and Computer Hardware	9	11	10	30	
6.	Recording Client Support Requirements	9	11	10	30	
7.	Applying Problem -Solving Techniques to Routine Malfunction	9	11	10	30	
8.	Implementing Maintenance Procedures	12	14	14	40	
9.	Maintaining Equipment and Consumables	9	11	10	30	
10.	Preventing and Eliminate MUDA	9	11	10	30	
11.	Updating and Documenting Operational Procedures	12	14	14	40	
	Total hours	123	147	140	410	

1.5. Qualification Level and Certification

Based on the descriptors elaborated on the Ethiopian National TVET Qualification Framework (NTQF) the qualification of this specific TVET Program is Level II**.**

The trainee can exit after successfully completing the modules in one level and will be awarded the equivalent institutional certificate on the level completed. However, only institutional certificate of training accomplishment will be awarded.

1.6. Target Groups

Any citizen **with or without disability** who meets the entry requirements under items 1.7 and capable of participating in the training activities is entitled to take part in the Program.

1.7 Entry Requirements

The prospective participants of this program are required to possess the requirements or directive of the **Ministry of Labor and Skills**.

1.8 Mode of Delivery

This TVET-Program is characterized as a formal Program on middle level technical skills. The mode of delivery is co-operative training. The time spent by the trainees in the real work place/ industry will give them enough exposure to the actual world of work and enable them to get hands-on experience.

The co-operative approach will be supported with school-based lecture-discussion, simulation and actual practice. These modalities will be utilized before the trainees are exposed to the industry environment.

Hence based on the nature of the occupation, location of the TVET institutions, and interest of the industry alternative mode of cooperative training such as apprenticeships, internship and traineeship will be employed. In addition, in the areas where industry is not sufficiently available the established production and service centers/learning factories in TVET institutions will be used as cooperative training places. The Training-Institution and identified companies have forged an agreement to co-operate with regard to the implementation of this program.

1.9. TVET-Program Structure

Unit of Competence		Module Code & Title		Training Outcomes	Duration (In Hours)
EIS HNS2 061221	**Connect Internal Hardware Component**	EIS HNS2 M01 0322	**Connecting Internal Hardware Component**	• Identify, categorize and distinguish the different types of internal hardware components • Determine components required • Obtain components • Install components • Evaluate modified system	40
EIS HNS2 02 1221	**Install and Optimizes Operating system Software**	EIS HNS2 M02 0322	**Installing and Optimizes Operating system Software**	• Determine function of operating system • Obtain operating system • Install, configure and optimize operating system • Provide instruction to meet new software requirements	40
EIS HNS2 011221	**Operate Database Application**	EIS HNS2 M03 0322	**Operating Database Application**	• Create database objects • Customize basic settings • Create forms • Retrieve information • Create reports	60
EIS HNS2 03 1221	**Administrate Network and Hardware Peripherals**	EIS HNS2 M04 0322	**Administrating Network and Hardware Peripherals**	• Confirm requirements of client • Obtain required peripherals • Connect hardware peripherals • Install peripherals to a network • Configure peripheral services • Administer and support peripheral	40

				- services - Maintain peripherals and fix common problems - Use and maximize operating system - Support input and output devices	
EIS HNS2 08 1221	**Care for Network and Computer Hardware**	EIS HNS2 M05 0322	**Caring for Network and Computer Hardware**	- Identify computer hardware components - Establish location requirements for hardware and peripherals - Monitor threats to the network - Establish maintenance practices	30
EIS HNS2 10 1221	**Record Client Support Requirements**	EIS HNS2 M06 0322	**Recording Client Support Requirements**	- Log requests for support - Prioritize support requests with appropriate personnel - Receive and Respond to Workplace Communication	30
EIS ITS2 07 0811	**Apply Problem -Solving Techniques to Routine Malfunction**	EIS HNS2 M07 0322	**Applying Problem - Solving Techniques to Routine Malfunction**	- Identify problems - Determine fundamental / root causes of the problem - Recommend solutions to problem	30
EIS HNS2 04 1221	**Implement Maintenance Procedures**	EIS HNS2 M08 0322	**Implementing Maintenance Procedures**	- Determine best practices for equipment and software maintenance - Revise practices, where appropriate - Identify and analyze IT system components to be maintained - Apply maintenance procedures	40

EIS HNS2 05 1221	**Maintain Equipment and Consumables**	EIS HNS2 M09 0322	**Maintaining Equipment and Consumables**	- Clean equipment - Replace and maintain consumables and supplies - Maintain equipment	30
EIS HNS2 11 1221	**Prevent and Eliminate MUDA**	EIS HNS2 M10 0322	**Preventing and Eliminate MUDA**	- Prepare for work. - Identify MUDA and problem - Analyze causes of a problem. - Eliminate MUDA and Assess effectiveness of the solution.	30
EIS HNS2 09 1221	**Update and Document Operational Procedures**	EIS HNS2 M11 0322	**Updating and Documenting Operational Procedures**	- Assess technical and user documentation - Update procedures - Update documentation	40
				Total Hours	**410**

*The time duration (Hours) indicated for the module should include all activities in and out of the TVET institution.

1.10   Institutional Assessment

Two types of evaluation will be used in determining the extent to which training outcomes are achieved. The specific training outcomes are stated in the modules. In assessing them, verifiable and observable indicators and standards shall be used.

The *formative assessment* is incorporated in the training modules and form part of the training process. Formative evaluation provides the trainee with feedback regarding success or failure in attaining training outcomes. It identifies the specific training errors that need to be corrected, and provides reinforcement for successful performance as well. For the teacher, formative evaluation provides information for making instruction and remedial work more effective.

Summative Evaluation the other form of evaluation is given when all the modules in the program have been accomplished. It determines the extent to which competence have been achieved. And, the result of this assessment decision shall be expressed in the term of institutional Assessment implementation guidelines..

Techniques or tools for obtaining information about trainees' achievement include oral or written test, demonstration and on-site observation.

1.11   TVET Teachers Profile

The teachers conducting this particular TVET Program are B Level and above who have satisfactory practical experiences or equivalent qualifications.

LEARNING MODULE 01 (TOP)
TVET-PROGRAMME TITLE: Hardware and Networking Service Level II
MODULE TITLE: Connecting Internal Hardware Component
MODULE CODE: <u>EIS HNS2 M01 0322</u>
NOMINAL DURATION: 40 Hours
MODULE DESCRIPTION: This Module describes the performance outcomes, skills and knowledge required to modify and connect system hardware components according to client and user requirements.
LEARNING OUTCOMES At the end of the module the trainee will be able to: **LO1.** Identify, categorize and distinguish the different types of internal hardware components **LO2.** Determine components required **LO3.** Obtain components **LO4.** Install components **LO5.** Evaluate modified system

MODULE CONTENTS:
 	
LO1. Identify, categorize and distinguish the different types of internal hardware components
 	
    1.1. Identifying internal hardware components
    1.2. Explaining purpose and characteristics of internal hardware component
 	
LO2. Determining components required
 	
    2.1. Identify user internal hardware component
    2.2. Organizing and recording user component requirements
 	
LO3. Obtain components
 	
    3.1. Obtaining technical specifications for the proposed components
    3.2. Recommending and assessing the options for final analysis
    3.3. Preparing obtain components for installation
 	
LO4. Install components
 	
    4.1. Arranging task priorities for the installation of selecting components
    4.2. Obtaining approval form appropriate person
    4.3. Installing and configuring components
    4.4. Testing components for error-free performance

4.5. Identifying and resolving problems

4.6. Testing and enhancing system performance,

4.7. Finalizing Document the installation and configuration process guidelines

LO5. Evaluate modified system

5.1. Analyzing user feedback

5.2. Identifying shortcomings in the system and record actions

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab

		❖ Summarize main points		
Demonstratio n	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Group discussion	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Inform the group	❖ Introduce the trainees with their peers

			members to speak loudly	
Exercise	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training	❖ Assign peer trainees ❖ Use additional nominal hours if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	

ASSESSMENT METHODS:

Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration /Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

LO1. Identify, categorize and distinguish the different types of internal hardware components
- Identify internal hardware components
- Explain purpose and characteristics of internal hardware component

LO2. Determining components required
- Identify user internal hardware component
- Organize and record user component requirements

LO3. Obtain components
- obtain technical specifications for the proposed components
- Recommend and assess the options for final analysis
- Prepare obtain components for installation

LO4. Install components
- Arrange task priorities for the installation of selecting components
- obtain approval form appropriate person
- Install and configure components
- Test components for error-free performance
- Identify and resolve problems
- Test and enhance system performance,
- Final Document the installation and configuration process guidelines

LO5. Evaluate modified system
- Analyze user feedback
- Identify shortcomings in the system and record actions

Annex: Resource Requirements

Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
	Connecting Internal Hardware Component (EIS HNS2 M01 0322)			
A.	*Learning Materials*			
1.	TTLM	prepared by the trainer	25	1:1
2.	Reference Books			
2.1	- Applying your typing skill		25	1:1
B.	*Learning Facilities & Infrastructure*			
1.	Computer Lab		1	1:25
2.	Projector		1	1:25
C.	*Consumable Materials*			
1.	CD	CD-R/RW	25	1:1
2	DVD	DVD-R/RW	25	1:1
3	Paper	A4	1Dosta	1:25
D.	*Tools and Equipment's*			
1.	Printers	LaserJet	1	1:25
2	Computers	RAM: 4GB and above HDD: 500 GB and above	25	1:1
3	Application Software	Mavis beacon	25	1:1
4	Operating System	Windows 7 and above	25	1:1

TVET-PROGRAMME TITLE: Hardware and Networking Service Level II
MODULE TITLE: Installing and Optimizing Operating System Software
MODULE CODE: EIS HNS2 M02 0322
NOMINAL DURATION: 40 Hours
MODULE DESCRIPTION: This Module defines the competence required to install operating system (OS) software and to make adjustments as a means of optimizing the system to accommodate business and client needs clearly.

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

LO1. Determine function of operating system

LO2. Obtain operating system

LO3. Install, configure and optimize operating system

LO4. Provide instruction to meet new software requirements

MODULE CONTENTS:

LO1. Determine function of operating system

    1.1. Identifying and understanding operating system purpose

    1.2. Distinguishing between batch system, real-time system, multi-tasking system

    1.3. Comparing and contrast different operating systems

    1.4. Identifying basic operating system functions

    1.5. Identifying management of virtual memory

LO2. Obtain operating system

    2.1. Obtaining Technical Specifications for Operating system requirements

    2.2. Identifying Operating system installation process and components

    2.3. Documenting adjustment recommendations and provide to appropriate person

    2.4. Determining and applying knowledge of licensing, hardware and security requirements

LO3. Install, configure and optimize operating system

    3.1 Installing, configuring and testing appropriate operating system using boot-utility options

    3.2 Using appropriate operating system user interface

    3.3 Optimizing the system to meet organizational requirements

    3.4 Documenting the system according to organizational requirements

LO4. Provide instruction to meet new software requirements

    4.1 Providing required instruction about changes to the client or users

    4.2 Obtaining client feedback about new system to ensure requirements met

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab

		❖ Summarize main points	
Demonstratio n	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Group discussion	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Inform the group	❖ Introduce the trainees with their peers

			members to speak loudly	
Exercise	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training	❖ Assign peer trainees ❖ Use additional nominal hours if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	

ASSESSMENT METHODS:

Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration /Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

LO1. Determine function of operating system

- Identify and demonstrate understanding of operating system purposes

- Distinguish between batch system, real-time system, multi-tasking system

- Compare and contrast different operating systems and their features

- Identify and demonstrate the knowledge of basic operating system functions, including file system, memory management, process scheduling

- Identify and demonstrate management of virtual memory

LO2. Obtain operating system

- .Contact operating system vendors to obtain technical specifications and system requirements

- Identify the process and steps required to install and configure the operating system using installation components

- Document adjustment recommendations and provide to appropriate person

- Determine and apply knowledge of licensing, hardware and security requirements

LO3. Install, configure and optimize operating system

- Install, configure and test operating system using installation components and boot-utility options

- Use the relevant operating system user interface to correctly configure the installation

- Optimize the system to meet organizational requirements

- Document the system according to organizational requirements

- Install the operating system with minimal disruption to client or users

LO4. Provide instruction to meet new software requirements

- Provide one-to-one instruction about changes to the client or users as required

- Obtain client evaluation about new system to ensure requirements are met, using appropriate feedback mechanism

Annex: Resource Requirements

Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
Installing and Optimizing Operating System Software (EIS HNS2 M02 0322)			
A.	*Learning Materials*			
1.	TTLM	TTTLM prepared by the trainer	25	1:1
2.	Reference Books			
2.1	Introduction to the Personal Computer	IT Essentials: PC Hardware and Software Course Booklet, V 5	25	1:1
2.2	Chapter One: Introduction to Computer	Vermaat, Misty E.Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014	10	1:2
2.3	Personal Computer All about PC	See http://code.pedia press.com/ for more information. PDF generated at: Thu, 17 Jun 2010 10:01:50 UTC	10	1:2
B.	*Learning Facilities & Infrastructure*			

1.	Computer Lab	Well ventilated	1	1:25
2.	Projector	LCD	1	1:25
C.	*Consumable Materials*			
1.	CD	CD-R, CD-RW	25	1:1
2	DVD	DVD-R/RW	25	1:1
5	Paper	A4 size	1 Dosta	1:25
6	Cartridge	Black and white	2	1:13
D.	*Tools and Equipments*			
1.	Printers	LaserJet / inkjet	1	1:25
2	Computers	RAM: 2GB and above HDD: 500 GB and above	25	1:1
3	Application Software	MS Office 2007 and above	25	1:1
4	Operating System	Windows 7 and above	25	1:1

LEARNING MODULE 03

TVET-PROGRAMME TITLE: Hardware and Network Servicing Level II

MODULE TITLE: Operating Database Application

MODULE CODE: EIS HNS2 M03 0322

NOMINAL DURATION: 60 Hours

MODULE DESCRIPTION: This module defines the competency required to operate database applications and perform basic operations.

LEARNING OUTCOMES At the end of the module the trainee will be able to: **LO1.** Create database objects **LO2.** Customize basic settings. **LO3.** Create forms **LO4** Retrieve information **LO5.** Create reports

MODULE CONTENTS:
 	
LO1. Create Database Objects
 	
      1.1 . Introduction to database
 	
      1.2 . Opening and designing data base using basic design principles
 	
      1.3 . Creating and modifying Database object
 	
      1.4 . Creating relationship
 	
      1.5 . Adding, modifying and deleting records
 	
      1.6 . Saving and compiling database objects
 	
LO2.   Customize basic settings
 	
      2.1 . Adjusting page layout
 	
      2.2 . Opening and viewing different toolbars
 	
      2.3 . Formatting fonts
 	
LO3. Create forms
 	
      3.1 Using wizard to create a simple form
 	
      3.2 Opening existing database and modifying records
 	
      3.3 Rearranging objects within the form

LO4. Retrieve information

4.1. Accessing existing database and locating required records

4.2. Creating simple query to retrieve information

4.3. Developing query with multiple criteria

4.4. Selecting data and displaying appropriately

LO5. Create Report

5.1. Designing reports in a logical sequence

5.2. Modifying reports

5.3. Distributing reports to appropriate person

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the work shop ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the work shop

		❖ Summarize main points	
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipments/ machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Group discussion	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Introduce the trainees with their peers

		❖ Inform the group members to speak loudly	
Exercise	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training	❖ Assign peer trainees ❖ Use additional nominal hours if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	

ASSESSMENT METHODS:

Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration /Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

Lo1. Create database objects

- Database application is opened and designed incorporating basic *design principles*

- Database object is created according to database usage, as well as user requirements

- Database object is modified as required

- Data in a table are added and modified according to information requirements

- Records are added, modified and deleted as required

- Database objects are saved and compiled

Lo2. Customize basic settings

- Page layout is adjusted to meet user requirements

- Different toolbars are opened and viewed

- Font is formatted as appropriate for the purpose of the database entries

LO3. Create reports

- Reports are designed to present data in a logical sequence or manner

- Reports are modified to include/exclude additional requirements

- Reports are distributed to appropriate person in a approved format

Lo4. Create forms

- Wizard used to create a simple form

- Existing database opened and records through a simple form modified

- Objects within the form rearranged to accommodate information requirements

Lo5. Retrieve information

- Existing database is accessed and required records located

- Simple query is created and required information retrieved

- Query with multiple criteria is developed and required information retrieved

- Data are selected and appropriately displayed

Annex: Resource Requirements

	Operating Database Application (EIS HNS2 M03 0322)			
Item No.	**Category/Item**	**Description/ Specifications**	**Quantity**	**Recommended Ratio (Item: Trainee)**
A.	*Learning Materials*			
1.	TTLM	• Prepared by Trainer	25	1:1
2.	Reference Books			
2.1	Fundamentals of Database System 4th Edition	**Author: Ramez Elmasri**	5	1:5
B.	*Learning Facilities & Infrastructure*			
1.	Internet	High speed broad band, Wifi	1	1:25
2.	Library	Multipurpose	1	
3.	Work shop	Well-ventilated class room with IT equipment	1	1:25
4	Lecture Room	8m x 12m	1	1:25
5	Shelves	wood or metal	1	
C.	*Consumable Materials*			
1.	Blank CD	CD-RW	25	1:1
2	Stationery	Whiteboard marker, printing paper, printer ink	1	1:25
3	Flash disk	San disk or similar 4-8GB	25	1:25
D.	*Tools and Equipment's*			
1.	Computer	HP, Dell	25	1:1
2	Divider	American socket standard	13	1:2
4	Projector	LCD	1	1:25
5	Microsoft access	2007 and above	25	1:1

LEARNING MODULE 04
TVET-PROGRAMME TITLE: Hardware and Networking Service Level II
MODULE TITLE: Administrating Network and Hardware Peripherals
MODULE CODE: <u>EIS HNS2 M04 0322</u>
NOMINAL DURATION:40 Hours
MODULE DESCRIPTION: This module defines the competence required to connect, install, configure, maintain and troubleshoot local area network and peripherals.
LEARNING OUTCOMES At the end of the module the trainee will be able to: **LO1**. Confirm requirements of client **LO2**. Obtain required peripherals **LO3**. Connect hardware   peripherals **LO4**. Install peripherals to a network **LO5**. Configure peripheral services **LO6**. Administer and support peripheral services **LO7**. Maintain peripherals and fix common problems **LO8**. Use and maximize operating system **LO9**. Support input and output devices

MODULE CONTENTS:
 	
LO1. Confirm Requirements of the client
 	
       1.1 Introduction to Computer
 	
            1.1.1   Understand purpose of a computer
 	
            1.1.2   Identify Hardware and Software Computer Components
 	
            1.1.3   Identify Computer Classifications
 	
       1.2 Identifying client peripherals requirements and confirming accordance of organizational standards
 	
       1.3 Documenting client requirements of peripherals and reporting for appropriate person.
 	
       1.4 Verifying client requirements based on organizational standards
 	
       1.5 Ensuring vendor warranty and support services
 	
            1.5.1   Using User manual
 	
            1.5.2   Written instructions from meetings
 	
            1.5.3   Verbal request or help desk

1.5.4   Search engine references

LO2. Obtain required peripherals

    2.1.   Obtaining Peripherals Devices

    2.2.   Entering Peripherals Into Equipment Inventory

    2.3.   Validating Delivered Physical Components

    2.4.   Storing peripherals

LO3. Connect hardware peripheral

    3.1 Verifying installation schedule

    3.2 Removing and/or Replacing old peripherals

    3.3 Connecting and configuring new peripherals

    3.4 Testing hardware peripherals

LO4. Install and configure peripherals to a network

4.1.   Planning location of peripherals to provide services to users

4.2.   Connecting peripherals to network and test

4.3.   Installing software to manage local and network-connected peripherals

4.4.   Using meaningful name for peripherals and control queues

4.5.   Configuring Security and access to use peripherals

4.6.   Configuring Workstation for peripherals to allow applications:

LO5. Administer and support peripheral services

    5.1. Assigning Priority to control queues

    5.2. Configuring network settings to create maintenance schedules and usage logs

    5.3. Demonstrating methods to use peripherals services

LO6. Used command line tools

    6.1. Outline command-line environment

    6.2. Command-line verses graphical user interface

    6.3. Listing command-line tools

    6.4. Applying command-line tools in GUI environment

LO7. Maintain peripherals and fix common problems

    7.1. Establishing and following regular maintenance schedule

    7.2. Replacing required consumables and components

    7.3. Determining and fixing malfunction peripherals

    7.4. Monitoring peripheral usage and traffic

LO8. Use and maximize operating system

    8.1. Configuring Operating system to suit the working environment,

    8.2. Using graphical user interface and the command line interface

    8.3. Using Operating system and third-party utilities based on system requirement.

    8.4. Customizing Graphical user interface

LO9. Support input and output devices

    9.1. Setting up and checking functionality of input and output devices

    9.2. Installing drivers and checking functionality

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab

			Summarize main points		
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Group discussion	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Inform the group	❖ Introduce the trainees with their peers

			members to speak loudly	
Exercise	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training	❖ Assign peer trainees ❖ Use additional nominal hours if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	

ASSESSMENT METHODS:

Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration /Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

Lo1. Confirm requirements of client

- Client peripheral requirements are Identified and confirmed in accordance with organizational standards.

- Client requirements and peripherals needed are documented in line with organizational standards and   report findings to the appropriate person.

- Client requirements are verified with appropriate person in line with organizational standards and reporting procedures.

- Action taken to ensure client support expectations are covered by vendor warranty and support services.

Lo2. Obtain required peripherals

- Peripherals are obtained under instruction from appropriate person.

- Peripherals are entered into equipment inventory according to organizational standards.

- Contents of delivered components and physical contents that match the packing list are validated and resolved discrepancies if necessary.

- Peripherals are stored according to vendor/manual guidelines.

LO3. Connect hardware   peripherals

- Timeframe for installation schedule is verified with the client requirement.

- Old peripherals are removed if they are being replaced with minimal disruption to clients, taking into account environmental considerations and OHS standards.

- New peripherals are connected with minimum disruption to clients, taking into account operating system procedures.

- The computer configured to accept the new peripherals based on business requirement

- Hardware peripherals are tested and confirmed to client satisfaction, pay particular attention to possible impact on other systems and make adjustments as required.

Lo4. Install and configure peripherals to a network

- Location of peripherals are planned to provide appropriate services to users and to take into consideration OHS standards.

- Peripherals are connected to network, using vendor-approved method and technology.
- Peripherals are connected to computers in the network using parallel, serial or other direct connection methods appropriate for the job order.
- Peripherals are tested for correct operation based on client's specifications.
- Required software is installed to manage local and network-connected peripherals according to business requirement software peripherals according to business requirement.
- Meaningful names are used for peripherals and control queues
- Security and access are configured to allow appropriate users to make use of peripherals.
- Workstation for peripherals is configured to allow applications to work with peripherals.

LO5. Administer and support peripheral services

- Priority is assigned to control queues based on organizational requirement.
- Settings on the network is configured to create maintenance schedules, usage logs, and cost center usage statistics
- Methods are demonstrated to the user for using peripheral services from their application or workstation

LO6. Use command line tools

- Outline command-line environment
- Differentiate command-line and graphical user interface (GUI)system
- List command-line tools
- Apply command-line tools in GUI environment

LO7. Maintain peripherals and fix common problems

- A regular maintenance schedule is established and followed as recommended by peripheral manufacturer.
- Consumables and components are replaced when required.
- Peripheral mishaps (unfortunate accident) and malfunctions are fixed based on procedure.

- Peripheral usage and traffic is monitored and recommend additional peripherals if needed.
- Failures of peripheral services or devices are determined and rectify as required.

LO8. Use and maximize operating system

- Operating system is configured to suit the working environment, including but not limited to setting variables.
- Application software is installed, upgraded and uninstalled to suit the working environment.
- Both graphical user interface and the command line interface are used to perform basic tasks based on clients.
- Operating system and third-party utilities are used based system requirement.
- Graphical user interface is customized based on clients.

LO9. Support input and output devices

- Input and output devices are set up and checked functionality based on requirement.
- Drivers are installed as appropriate and checked functionality based vendor manuals.
- Drivers are ensured to be properly working

Annex: Resource Requirements

Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
Administrating Network and Hardware Peripherals (EIS HNS2 M04 0322)			
A.	*Learning Materials*			
1.	TTLM	TTTLM prepared by the trainer	25	1:1
2.	Reference Books			
2.1	Introduction to the Personal Computer	IT Essentials: PC Hardware and Software Course Booklet, V 5	25	1:1
2.2	Introduction to Computer	Vermaat, Misty E.Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014	10	1:2
2.3	Personal Computer All about PC	See http://code.pedia press.com/ for more information. PDF generated at: Thu, 17 Jun 2010 10:01:50 UTC	10	1:2
B.	*Learning Facilities & Infrastructure*			

1.	Computer Lab	Well ventilated	1	1:25	
2.	Projector	LCD	1	1:25	
C.	*Consumable Materials*				
1.	CD	CD-R/RW	25	1:1	
2	DVD	R/RW	25	1:1	
5	Paper	A4 size	1 Dosta	1:25	
6	Cartridge	Laser jet	1	1:25	
D.	*Tools and Equipment's*				
1.	Printers	Laser jet	1	1:25	
2	Computers	RAM: 2GB and above HDD: 250 GB and above	25	1:1	
3	Application Software	MS Office 2007 and above	25	1:1	
4	Operating System	Windows 7 and above	25	1:1	

LEARNING MODULE 05
TVET-PROGRAMME TITLE: Hardware and Network Servicing Level II
MODULE TITLE:- Caring for Network and Computer Hardware
MODULE CODE: <u>EIS HNS2 M05 0322</u>
NOMINAL DURATION: 30 hours
MODULE DESCRIPTION: This module defines the competence required to maintain computer hardware. It includes locating sitting of hardware for safe and efficient utilization and reducing risk of infection.

LEARNING OUTCOMES
 	
At the end of the module the learner will be able to:
 	
    LO1. Identify computer hardware components
 	
    LO2. Establish location requirements for hardware and peripherals
 	
    LO3. Monitor threats to the network
 	
    LO4. Establish maintenance practices

MODULE CONTENTS:
 	
LO1. Identify computer hardware components
 	
    1.1.   Identifying external and internal hardware components and peripherals
 	
    1.2.   Reviewing and recording requirements specified by hardware manufacturers
 	
    1.3.   Determining and recording quality standard of hardware and peripherals
 	
    1.4.   Determining and establishing relationship of hardware and software components
 	
    1.5.   Determining, recording and applying safe work practices
 	
  LO2. Establish location requirements for hardware and peripherals
 	
    2.1.   Determining and applying suitable environmental conditions
 	
    2.2.   Considering general orientation and proper functioning of different computer platforms
 	
    2.3.   Determining and applying System protection devices
 	
    2.4.   Determining and applying requirements when moving hardware
 	
    2.5.   Determining and applying suitable storage principle
 	
    2.6.   Considering and applying business requirements
 	
    2.7.   Considering OHS standards and environmental concerns
 	
LO3. Monitor threats to the network

3.1. Using third-party software to evaluate and report on system security

3.2. Identifying security threats

3.3. Ensuring carry-out spot checks and other security strategies

3.4. Investigating and implementing inbuilt or additional encryption facilities

3.5. Preparing and presenting an audit report and recommendation

3.6. Obtaining approval for recommended changes

LO4. Establish maintenance practices

4.1 Determining maintenance requirements specified by the equipment manufacturer.

4.2 Producing maintenance schedules

4.3 Performing diagnostic function

4.4 Configuring software security settings

4.5 Determining unserviceable components

4.6 Using the operating system and third-party diagnostic tools

LEARNING METHODS:				
For None Impaired Trainees	Reasonable Adjustment for Trainees with Disability (TWD)			
	Low Vision and Blind	Deaf	Hard of hearing	Physical impairment
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in audio/video & in <u>brail format</u> ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide orientation on the physical feature of the work shop

	lecture in audio format ❖ Provide orientation on the physical feature of the work shop ❖ Summarize main points	❖ Summarize main points		
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ Provide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ Provide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/ machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ Provide tutorial support(if necessary
Group discussion	❖ Facilitate the integration of trainees with group members	❖ Use sign language interpreters ❖ Facilitate the integration of trainees	❖ Facilitate the integration of trainees with group	❖ Introduce the trainees with their peers

		with group members	members	
	❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Inform the group members to speak loudly	

ASSESSMENT METHODS:

Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges

Written test	❖ Prepare the exam in large texts/Brail ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstr ation/Obs ervation	❖ Brief the instruction or provide them in large text/Brail ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

Assessment criteria

Lo1. Identify computer hardware components

- External hardware components and peripherals are identified based on business requirement
- Internal hardware components are identified as needed
- Requirements specified by hardware manufacturers are reviewed, recorded and applied where appropriate.
- Quality standards of hardware components and associated peripherals are determined and recorded
- Relationship of computer hardware and software is determined and established for proper functioning of the system
- Safe work practices are determined, recorded and applied, taking into account legal and manufacturer requirements

Lo2. Establish location requirements for hardware and peripherals

- Suitable environmental conditions are determined and applied for hardware and peripherals
- General orientation and proper functioning of different computer platforms are considered in locating computer
- System protection devices are determined and applied to keep hardware form damage.
- Requirements are determined and applied when moving hardware.
- Suitable storage principles are determined and applied for hardware and associated peripherals and media.
- Business requirements are considered and applied in respect of hardware location
- Functions of computer hardware and associated OHS standards and environmental concerns are considered

LO3. Monitor threats to the network

- Use third-party software or utilities to evaluate and report on system security
- Review logs and audit reports to identify security threats
- Carry-out spot checks and other security strategies to ensure that procedures are being followed
- Investigate and implement inbuilt or additional encryption facilities

- Prepare and present an audit report and recommendations to appropriate person
- Obtain approval for recommended changes to be made

Lo4. Establish maintenance practices

- Maintenance requirements specified by the equipment manufacturer are determined.
- Maintenance schedules including removal of dust and grease build -up are produced
- Diagnostic functions including replacing suspect components with other serviceable components and reloading of associated software are performed
- Software security settings to prevent destructive software from infecting the computer are configured
- Unserviceable components are determined whether replaceable through warranty, replacement or upgrade
- Diagnostic functions are performed using the operating system and third-party diagnostic tools

Annex: Resource Requirements

Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
		Caring for Network and Computer Hardware (EIS HNS2 M05 0322)		
A.	*Learning Materials*			
1.	TTLM	Teacher's made • Information sheet • Operation Sheet • PBT materials	25	1:1
B.	*Learning Facilities & Infrastructure*			
1	Workshop	- 8x12m; equipped with networked computer, reference materials	1	1:25
2.	Library	- Multipurpose	1	1:25
3.	Internet	broadband /Wireless	1	1:25
4	Shelves	- wooden or metal	1	1:25
5	White Board	1.50 X 1.50	1	1:25
6	Cabinet	- metal or wood	1	1:25
C.	*Consumable Materials*			
1	Blank Disk	- CD-R/RW	5	1:5
2	Stationery	- Whiteboard marker, printing paper, printer ink, pen, sanitizing alcohol	1	1:25
3	Flash disk	8GB	5	1:5
D.	**Tools and Equipment's**			
5	Software	antivirus software , operating system (w7,w8,w10 or above),recovery software, Application soft wares.	25	1:1
7	UPS	1000 Volt	5	1:5
8	Divider	Power king and advanced if any	10	1:3
9	Multimedia projector	- LCD	1	1:25
10	Printer	Laser jet and ink jet	1	1:25

LEARNING MODULE 06
TVET-PROGRAMME TITLE: Hardware and Network Servicing Level II
MODULE TITLE: Recording Client Support Requirements
MODULE CODE: EIS HNS2 M06 0322
NOMINAL DURATION: 30Hours
MODULE DESCRIPTION: This module defines the competence required to record, prioritize and escalate client support requests.

LEARNING OUTCOMES
 	
 At the end of the module the learner will be able to:
 	
    LO1. Log requests for support
 	
    LO2. Prioritize support requests with appropriate personnel
 	
    LO3: Receive and Respond to Workplace Communication

MODULE CONTENTS:

LO1. Log requests for support

      1.1.   Recording client support requests and requirements based on organizational standards

      1.2.   Reviewing Client support history and details

      1.3.   Checking accuracy and urgency requested information

LO2. Prioritize support requests with appropriate personnel

    2.1 Identifying Relevant guidelines for prioritizing

    2.2 Prioritizing Client requests

    2.3 Referring Requests to appropriate person or department

    2.4 Communicating with client support staff

LO3: Receive and Respond to Workplace Communication

    3.1. Gathering required information

    3.2. Recording Instructions/ information properly.

    3.3. Taking immediately action based on information received

    3.4. Reading and interpreting written notices and instructions according to organizational guidelines

    3.5. Following routine written instruction in sequence

    3.6. Giving feedback to workplace supervisor based on the instructions/information received

LEARNING METHODS:				
For None Impaired Trains	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision and Blind	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video & in<u>Brail format</u>** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the work shop ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format ❖ Summarize main points	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the work shop

Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/ machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Individual assignment	❖ repare the assignment questions in large text/Brail ❖ Encourage the trainees to prepare and submit the assignment in large texts/Brail ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ se sign language interpreter ❖ rovide briefing /orientation on the assignment ❖ rovide visual recorded material	❖ rovide briefing /orientation on the assignment ❖ rovide visual recorded material	
ASSESSMENT METHODS:				

Written test	❖ Prepare the exam in large texts/Brail ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration/Observation	❖ Brief the instruction or provide them in large text/Brail ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA

LO1. Log requests for support

- Client support requests and requirements are recorded according to organizational standards

- Client support history and details are reviewed

- The information is checked and requested for accuracy and urgency according to organizational standards

LO2. Prioritize support requests with appropriate personnel

- Relevant guidelines are identified for prioritizing or rating client requests

- Client requests are prioritized based on its criticality or impact on the business

- Requests are referred to an appropriate person or department for assistance

- Appropriate persons involved with client support are to be communicated

LO3: Receive and Respond to Workplace Communication

- Gathering required information

- Recording Instructions/ information properly.

- Taking immediately action based on information received

- Reading and interpreting written notices and instructions according to organizational guidelines

- Following routine written instruction in sequence

Recording Client Support Requirements (EIS HNS2 M06 0322)			
Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Learner)
Learning Materials			
TTLM	- Teacher's Made • Information sheet • Operation Sheet • OBT Materials	25	1:1
Reference Books	CompTIA Network+ all in one exam guide 6th edition Basics of Networking	25	1:1
Learning Facilities & Infrastructure			
Lecture Room	- 8x12m; equipped with IT equipment and internet	1	1:25
Library	- Multipurpose	1	1:25
Shelves	- wooden or metal	5	1:5
Locker	- wooden or metal	2	1:13
Cabinet	- metal	1	1:25
Consumable Materials			
Stationery	- Whiteboard marker, printing paper, printer ink	1	1:25
Flash disk	San disk or similar 16GB	8	1:4
Tools and Equipment's			
DSL Access point	• ZTE	1	1:25
Browser Software	• Internet Explorer , • Mozilla Firefox	1	1:25
UPS	• 1000 Volt Amper	25	1:1
Desktop Computer	Core I5, RAM=4GB, HDD=500GB	25	1:1
Multimedia projector	- LCD	1	1:25
Printer	- Laser jet printer - color printer	1	1:25

LEARNING MODULE 07
TVET-PROGRAMME TITLE: Hardware and Networking Service Level II
MODULE TITLE: Applying Problem – Solving Techniques to Routine Malfunction
MODULE CODE: <u>EIS HNS2 M07 0322</u>
NOMINAL DURATION: 30. Hours
MODULE DESCRIPTION: This module defines the competence required to apply problem solving techniques to determine the origin and plan for the resolution of à routine malfunction.
LEARNING OUTCOMES At the end of the module the trainee will be able to: **LO1.** Identify problems **LO2.** Determine fundamental / root causes of the problem **LO3.** Recommend solutions to problem LO4: Participate in Workplace Communication

MODULE CONTENTS:
 	
LO1. Identify problems
    1.1. Identifying Hardware, software, user or procedural problem to appropriate person
    1.2. Defining and determining Problems
    1.3. Identifying and documenting condition of Hardware, software, user and problem
 	
LO2. Determine fundamental / root causes of the problem
    2.1. Identifying possible causes
    2.2. Developing possible cause statement
    2.3. Identifying fundamental causes and conducting investigation
 	
LO3. Recommend solutions to problem
    3.1. Identifying potential solution to problem
    3.2. Recommending possible solutions
    3.3. Planning Implementation and evaluation of solutions
    3.4. Documenting and submitting recommended solutions
 	
LO4. Participate in Workplace Communication
    4.1. Using effective communication skills to gather information
    4.2. Defining workplace procedures for locating and storing of information
    4.3. Recording workplace data based on standard workplace forms and documents.
    4.4. Using basic mathematical processes for routine calculations.

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format ❖ Summarize main points	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training	❖ Illustrate in clear & short method ❖ Use Video recorded material	❖ Facilitate and support the trainees having severe upper limbs impairment to operate

	❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ Show clear and short method ❖ Use gesture ❖ provide tutorial support (if necessary)	❖ Ensure the attention of the trainees ❖ Provide tutorial support (if necessary)	equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ Provide tutorial support (if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	
Computer Based Training	❖	❖	❖	
ASSESSMENT METHODS:				
Interview	❖	❖ Use sign language interpreter ❖ Ensure or conform whether the	❖ Speak loudly ❖ Using sign language	Use written response as an option for the trainees

		proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	interpreter if necessary	having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

Lo1. Identify problems

- Hardware, software, user or procedural problem areas are identified to appropriate person in the organization
- Problems to be investigated are defined and determined
- Current conditions of the hardware, software, user and problems are objectively identified and documented

Lo2. Determine fundamental / root causes of the problem

- Possible causes are identified based on experience and the use of diagnostic tools and analytical techniques.
- Possible cause statements are developed based on findings
- Fundamental causes are identified per results of diagnosis and investigation conducted.

LO3. Recommend solutions to problem

- Potential solutions to problems are identified
- Recommendations about possible solutions are developed, documented, ranked and presented to the appropriate person for decision
- Implementation and evaluation of solutions are planned
- Recommended solutions are documented and submitted to the appropriate person for confirmation

Applying Problem – Solving Techniques to Routine Malfunction (EIS HNS2 M07 0322)				
Item No.	**Category/Item**	**Description/ Specifications**	**Quantity**	**Recommended Ratio (Item: Trainee)**
A.	*Learning Materials*			
1.	TTLM	TTTLM prepared by the trainer	25	1:1
2.	Reference Books			
2.1	Introduction to the Personal Computer	IT Essentials: PC Hardware and Software Course Booklet, V 5	25	1:1
2.2	A+ guide to hardware managing maintaining and troubleshooting	A+ guide to hardware managing maintaining and troubleshooting	10	1:3
B.	*Learning Facilities & Infrastructure*			
1.	Computer Lab	Well ventilated	1	1:25
2.	Projector	LCD	1	1:25
C.	*Consumable Materials*			
1.	CD	R/RW	25	1:1
2	DVD	R/RW	25	1:1
5	Paper	A4 size	1 Dosta	1:25
6	Cartridge	Laser jet	1	1:25
D.	*Tools and Equipment's*			
1.	Printers		5	1:5
2	Computers	RAM: 2GB and above HDD: 250 GB and above	25	1:1
3	Application Software	MS Office 2007 and above	25	1:1
4	Operating System	Windows 7 and above	25	1:1
5	Anti-Virus Software	latest	1	1:25

	LEARNING MODULE 08
TVET-PROGRAMME TITLE: Hardware and Network Servicing Level II
MODULE TITLE: Implementing Maintenance Procedure
MODULE CODE: EIS HNS2 M08 0322
NOMINAL DURATION : 40 Hours
MODULE DESCRIPTION : This module defines the competence required to record and store details of software, hardware and technical documentation.
LEARNING OUTCOMES At the end of the module the trainee will be able to: **LO1.** Determine best practices for equipment and software maintenance **LO2.** Revise practices, where appropriate **LO3.** Identify and analyze IT system components to be maintained **LO4.** Apply maintenance procedures

MODULE CONTENTS:
 	
LO1. Determine best practices for equipment and software maintenance
 	
    1.1   Identifying equipment and software to be maintained and implemented processes
 	
    1.2 1.2 Identifying vendor documentation, peer organizations or research information
 	
    1.3 1.3 Obtaining user Requirements
 	
    1.4   Documenting maintenance procedure
 	
LO2.   Revise practices, where appropriate
 	
    2.1. Reviewing and Monitoring Maintenance operation
 	
    2.2. Identifying Problem areas to meet service-level agreements and considering changes
 	
    2.3. Assessing Changes in consultation with appropriate person
 	
    2.4. Designing and implementing Improved maintenance procedure
 	
LO3. Identify and analyze IT system components to be maintained
 	
    3.1. Determining and documenting Warranty status
 	
    3.2. Reviewing System architecture and configuration documentation
 	
    3.3.   Identifying Critical components and document recommendations
 	
LO4. Apply maintenance procedures
 	
    4.1. Creating Preventative maintenance schedule
 	
    4.2. Identifying and Applying maintenance procedure
 	
    4.3. Documenting Recommended procedure and submitting for approval
 	
    4.4. Giving Orientation to implementing staffs and follow up maintenance schedule
 	
    4.5. Observing OHS throughout the process

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the work shop ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the work shop

		❖ Summarize main points		
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/ machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Group discussion	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Introduce the trainees with their peers

			❖ Inform the group members to speak loudly	
Exercise	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training	❖ Assign peer trainees ❖ Use additional nominal hours if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	

ASSESSMENT METHODS:

Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration /Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

Lo1. Determine best practices for equipment and software maintenance

- Equipment and software to be maintained and implemented processes re identified to ensure future acquisitions of equipment and software.
- Vendor documentation, peer organizations or research information detailing best practices in equipment and software maintenance are identified to improve system performance and reliability.
- Requirements are obtained from user in the area of equipment maintenance and reliability.
- Procedures are documented for maintenance based upon best practices.

Lo2. Revise practices, where appropriate

- Maintenance operation is monitored and reviewed where appropriate.
- Problem areas including failures are identified to meet service-level agreements, and consider changes to maintenance procedures.
- Changes are assessed in consultation with user, support staff and third party suppliers.
- Improvements are designed and implemented to maintenance procedures.

Lo3. Identify and analyze IT system components to be maintained

- Warranty status of components and/or software is determined and documented according to vendor, project or organizational requirements.
- System architecture and configuration documentation are reviewed for currency status.
- Critical components and/or software are identified and recommendations are documented regarding possible service arrangements.

LO4. Apply maintenance procedures

- Preventative maintenance schedule is created based on cost, business and service-level agreements requirements
- Specific and appropriate maintenance procedure is identified and applied based on cost, business and service-level agreements requirements
- Recommended procedures are documented and submitted for approval in accordance with organizational requirements and service-level agreement
- Implementing staff are oriented on the procedures and ensured to follow the maintenance schedule
- *OHS* is observed throughout the process

Annex: Resource Requirements

Implementing Maintenance Procedure (EIS HNS2 M08 0322)				
Item No.	**Category/Item**	**Description/ Specifications**	**Quantity**	**Recommended Ratio (Item: Trainee)**
A.	*Learning Materials*			
		• Session plan	1	
1.	TTLM	• Information sheet • Job sheet • Operation sheet	25	1:1
2.	Reference Books			
2.1	CompTIA Network+ all in one exam guide 6th edition Basics of Networking	CompTIA Network+ all in one exam guide 6th edition Basics of Networking	5	1:5
B.	*Learning Facilities & Infrastructure*			
1.	Internet	High speed broad band, Wifi	1	1:25
2.	Library	Multipurpose		
3.	Work shop	Well-ventilated class room with IT equipment	1	1:25
4	White board	1.20 X 1.50m	1	1:25
5	shelves	wooden or metal	1	1:25
C.	*Consumable Materials*			
1.	Blank CD	CD-RW		
2	Stationery	Whiteboard marker, printing paper, printer ink	1	1:25
3	Flash disk	San disk or similar 4-8GB	25	1:25
D.	*Tools and Equipments*			
1.	Computer	HP, Dell	25	1:1
2	Divider	American socket	10	1:3
3	projector	LCD	1	1:25

TVET-PROGRAMME TITLE: Hardware and Networking Service Level II

MODULE TITLE: Maintaining Equipment And Consumables

MODULE CODE: EIS HNS2 M09 0322

NOMINAL DURATION: 30 Hours

MODULE DESCRIPTION: This Module defines the competence required to maintain the operation of basic computer hardware and peripherals including the replacement of consumables.

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

LO1. Clean equipment

LO2. Replace and maintain consumables and supplies

LO3. Maintain equipment

MODULE CONTENTS:

LO1. Clean equipment

    1.1 Accessing and verifying Cleaning supplies for usability

    1.2 Recording and documenting maintenance actions

    1.3 Cleaning equipment's as manufacture specifications and manuals

LO2.   Replace and maintain consumables and supplies

    2.1 Accessing consumables and record usage information

    2.2 Replacing consumables and log the action undertaken

    2.3 Disposing consumables by following environmental guidelines

    2.4 Testing equipment

LO3. Maintain equipment

    3.1 Identifying Equipment which requires maintenance

    3.2 Maintaining equipment

    3.3 Documenting and reporting Maintenance procedures

    3.4 Exercising care to prevent interruption of business activities

    3.5 Storing unused equipment devices

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab

		❖ Summarize main points		
Demonstratio n	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance ❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training ❖ Show clear and short method ❖ Use gesture ❖ rovide tutorial support (if necessary)	❖ Illustrate in clear & short method ❖ Use Video recorded material ❖ Ensure the attention of the trainees ❖ rovide tutorial support (if necessary)	❖ Facilitate and support the trainees having severe upper limbs impairment to operate equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ rovide tutorial support (if necessary
Group discussion	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Brief the thematic issues of the work	❖ Use sign language interpreters ❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member	❖ Facilitate the integration of trainees with group members ❖ Conduct close follow up ❖ Introduce the trainees with other group member ❖ Inform the group	❖ Introduce the trainees with their peers

			members to speak loudly	
Exercise	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/practical training ❖ Introduce new and relevant vocabularies	❖ Conduct close follow up and guidance ❖ Provide tutorial support if necessary ❖ provide special attention in the process/ practical training	❖ Assign peer trainees ❖ Use additional nominal hours if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	

ASSESSMENT METHODS:				
Interview		❖ Use sign language interpreter ❖ Ensure or conform whether the proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	❖ Speak loudly ❖ Using sign language interpreter if necessary	❖ Use written response as an option for the trainees having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration /Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

LO1. Clean equipment

- Cleaning supplies are accessed and verified for usability on the selected equipment
- Maintenance actions undertaken are recorded and documented according to organizational procedures
- Equipment are cleaned as per manufacturer specifications and in line with organizational manuals

LO2. Replace and maintain consumables and supplies

- Access consumables from storage points and record usage information in line with organizational procedures
- Replace consumables when needed and log the action undertaken
- Dispose of consumables following environmental guidelines
- Test equipment to ensure it is in working order at set time periods and in line with organizational procedures

LO3. Maintain equipment

- Equipment are identified which requires maintenance
- Equipment *is* maintained as required by organizational guidelines and manufacturer specifications.
- Maintenance procedures are documented as required by organizational guidelines.
- Care is exercised to prevent interruption of business activities during maintenance procedures
- Unused equipment devices are stored in line with manufacturer specifications and organizational guidelines

Annex: Resource Requirements

Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A.	*Learning Materials*			
1.	TTLM	TTTLM prepared by the trainer	25	1:1
2.	Reference Books			
2.1	Introduction to the Personal Computer	IT Essentials: PC Hardware and Software Course Booklet, V 5	25	1:1
B.	*Learning Facilities & Infrastructure*			
1.	Computer Lab	Well ventilated	1	1:25
2.	Projector	LCD	1	1:25
C.	*Consumable Materials*			
1	DVD	DVD R/RW	25	1:25
2	Paper	A4	1 dosta	1:25
3	Cartridge	Laser	1	1:25
D.	*Tools and Equipment's*			
1.	Printers	Laser jet	5	1:5
2	Computers	RAM: 2GB and above HDD: 250 GB and above	25	1:1
3	Application Software	MS Office 2007 and above	25	1:1
4	Operating System	Windows 7 and above	25	1:1

TVET-PROGRAMME TITLE: Hardware and Networking Service Level II	

TVET-PROGRAMME TITLE: Hardware and Networking Service Level II

MODULE TITLE: Preventing and Eliminate MUDA

MODULE CODE: EIS HNS2 M10 0322

NOMINAL DURATION: 30 Hours

MODULE DESCRIPTION: This Module covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her workplace by applying scientific problem-solving techniques and tools to enhance quality, productivity and other kaizen elements on continual basis It covers responsibility for the day-to-day operation of the work and ensures Kaizen Elements are continuously improved and institutionalized.

LEARNING OUTCOMES

At the end of the module the trainee will be able to:

LO1. Prepare for work.

LO2. Identify MUDA and problem

LO3. Analyze causes of a problem.

LO4. Eliminate MUDA and Assess effectiveness of the solution.

LO5. Prevent occurrence of wastes and sustain operation.

MODULE CONTENTS:
LO1. Prepare for work.

1.1. Using work instructions to determine job requirements

1.2. Reading and interpreting job specifications manual

1.3. Observing OHS requirements throughout the work

1.4. Selecting appropriate material for work

1.5. Identifying and checking safety equipment and tools for safe and effective operation

LO2. Identify MUDA and problem

2.1 Preparing and implementing MUDA plan

2.2 Discussing causes and effects of MUDA

2.3 Listing kaizen elements by using statistical tools and techniques.

2.4 Using Visual Management Board/Kaizen Board for identified kaizen elements

2.5 Using tools and techniques to draw and analyze current situation of the work place

2.6 identifying and measuring Wastes/MUDA by relevant procedures

2.7 Reporting identified and measured wastes to relevant personnel.

LO3. Analyze causes of a problem.

3.1 Listing all possible causes of a problem

3.2 Analyzing and identifying cause relationships of the problems

3.3 Selecting root cause which is most directly related to the problem

3.4 Listing possible way to eliminate the most critical root cause

3.5 Testing and evaluating suggested solutions for potential complications

3.6 Preparing detailed summaries of the action plan to implement the suggested solution

LO4. Eliminate MUDA and Assess effectiveness of the solution.

4.1.Preparing and implementing MUDA elimination plan by medium KPT members

4.2.Adopting necessary attitude and basic principles to eliminate waste/MUDA.

4.3.Using tools and techniques to eliminate wastes/MUDA

4.4.Reducing and eliminating Wastes/MUDA

4.5.Identifying and comparing tangible and intangible results with targets

4.6.Reporting improvements gained by elimination of waste/MUDA to relevant bodies

LO5. Prevent occurrence of wastes and sustain operation.

5.1.Preparing and implementing Plan of MUDA prevention

5.2.Discussing and preparing standards required for elimination of MUDA

5.3.Preventing wastes/MUDA occurrences

5.4.Facilitating standard procedures and practices updating

Learning Methods:

For none impaired trainees	Reasonable Adjustment for Trainees with Disability (TWD)			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format ❖ Summarize main points	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training	❖ Illustrate in clear & short method ❖ Use Video recorded material	❖ Facilitate and support the trainees having severe upper limbs impairment to operate

	❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ Show clear and short method ❖ Use gesture ❖ provide tutorial support (if necessary)	❖ Ensure the attention of the trainees ❖ Provide tutorial support (if necessary)	equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ Provide tutorial support (if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	
Computer Based Training	❖	❖	❖	
ASSESSMENT METHODS:				
Interview	❖	❖ Use sign language interpreter ❖ Ensure or conform whether the	❖ Speak loudly ❖ Using sign language	Use written response as an option for the trainees

		proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	interpreter if necessary	having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

LO1. Prepare for work.

- Work instructions are used to determine job requirements, including method, material and equipment.

- Job specifications are read and interpreted following working manual.

- OHS requirements, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.

- Appropriate material is selected for work.

- Safety equipment and tools are identified and checked for safe and effective operation.

LO2. Identify MUDA and problem

- Plan of MUDA and problem identification is prepared and implemented.

- Causes and effects of MUDA are discussed.

- All possible problems related to the process /Kaizen elements are listed using statistical tools and techniques.

- All possible problems related to kaizen elements are identified and listed on Visual Management Board/Kaizen Board.

- Tools and techniques are used to draw and analyze current situation of the work place.

- Wastes/MUDA are identified and measured based on relevant procedures.

- Identified and measured wastes are reported to relevant personnel.

LO3. Analyze causes of a problem.

- All possible causes of a problem are listed.

- Cause relationships are analyzed using 4M1E.

- Causes of the problems are identified.

- The root cause which is most directly related to the problem is selected.

- All possible ways are listed using creative idea generation to eliminate the most critical root cause.

- The suggested solutions are carefully tested and evaluated for potential complications.

- Detailed summaries of the action plan are prepared to implement the suggested solution.

LO4. Eliminate MUDA and Assess effectiveness of the solution.

- Plan of MUDA elimination is prepared and implemented by medium KPT members.
- Necessary attitude and the ten basic principles for improvement are adopted to eliminate waste/MUDA.
- Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS.
- Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements.
- Tangible and intangible results are identified.
- Tangible results are compared with targets using various types of diagrams.
- Improvements gained by elimination of waste/MUDA are reported to relevant bodies.

LO5. Prevent occurrence of wastes and sustain operation.

- Plan of MUDA prevention is prepared and implemented.
- Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared.
- Occurrences of wastes/MUDA are prevented by using visual and auditory control methods.
- Waste-free workplace is created using 5W and 1Hsheet.
- The completion of required operation is done in accordance with standard procedures and practices.
- The updating of standard procedures and practices is facilitated.
- The capability of the work team that aligns with the requirements of the procedure is ensured and trained on the new Standard Operating Procedures (SOPs).

Annex: Resource Requirements

Item No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
	Preventing and Eliminate MUDA (EIS HNS2 M10 0322)			
A.	*Learning Materials*			
1.	TTLM	TTTLM prepared by the trainer	25	1:1
2.	Reference Books			
2.1	Introduction to the Personal Computer	IT Essentials: PC Hardware and Software Course Booklet, V 5	25	1:1
2.2	Chapter One: Introduction to Computer	Vermaat, Misty E.Microsoft Office 2013 Introductory. Cengage Learning, p.IT3. 2014	10	1:2
2.3	Personal Computer All about PC	See http://code.pedia press.com/ for more information. PDF generated at: Thu, 17 Jun 2010 10:01:50 UTC	10	1:2
B.	*Learning Facilities & Infrastructure*			

1.	Computer Lab	Well equipped	1	1:25
2.	Projector	LCD	1	1:25
C.	**Consumable Materials**			
1.	CD	R/RW	25	1:1
2	DVD	R/RW	25	1:1
5	Paper	A4 size	1 dosta	1:25
6	Cartridge	black	1	1:25
D.	**Tools and Equipment's**			
1.	Printers	LaserJet	1	1:25
2	Computers	RAM: 2GB and above HDD: 250 GB and above	25	1:1
3	Application Software	MS Office 2007 and above	25	1:1
4	Operating System	Windows 7 and above	25	1:1
5	Anti-Virus Software	latest	1	1:25

LEARNING MODULE 11
TVET-PROGRAMME TITLE: Hardware and Networking Service Level II
MODULE TITLE: Updating and Documenting Operational Procedures
MODULE CODE: EIS HNS2 M11 0322
NOMINAL DURATION: 40 Hours
MODULE DESCRIPTION: This module defines the competence required to assess, update and document the operational procedures required to use the system.
LEARNING OUTCOMES At the end of the module the trainee will be able to: **LO1**. Assess technical and user documentation **LO2**. Update procedures **LO3**. Update documentation **LO4**: Work in Team Environment

MODULE CONTENTS:
 	
LO1. Assess technical and user documentation
 	
    1.1.   Reviewing current version of technical and user documentation
 	
    1.2.   Comparing technical and user documentation with current system
 	
    1.3.   Identifying and documenting inaccuracies for future reference.
 	
LO2. Update procedures
 	
    2.1.   Determining operational procedure
 	
    2.2.   Developing / updating operational procedures
 	
    2.3.   Submitting proposed operating procedures to appropriate person
 	
LO3. Update documentation
 	
    3.1.   Reviewing feedback and making appropriate changes
 	
    3.2.   Updating technical and user documentation
 	
    3.3.   Submitting technical and user documentation for final approval
 	
    3.4.   Distributing technical and user documentation
 	
LO4: Work in Team Environment
 	
    4.1.   Identifying role and objective of the team
 	
    4.2.   Identifying team parameters, reporting relationships and responsibilities
 	
    4.3.   Identifying individual role and responsibilities within the team
 	
    4.4.   Identifying and recognizing roles and responsibility of other team members

Learning Methods:				
For none impaired trainees	**Reasonable Adjustment for Trainees with Disability (TWD)**			
	Low Vision	**Deaf**	**Hard of hearing**	**Physical impairment**
Lecture-discussion	❖ Provide large print text ❖ Prepare the lecture in **Audio/video** ❖ Organize the class room seating arrangement to be accessible to trainees ❖ Write short notes on the black/white board using large text ❖ Make sure the luminosity of the light of class room is kept ❖ Use normal tone of voice ❖ Encourage trainees to record the lecture in audio format ❖ Provide Orientation on the physical feature of the computer Lab ❖ Summarize main points	❖ Assign sign language interpreter ❖ Arrange the class room seating to be conducive for eye to eye contact ❖ Make sure the luminosity of the light of class room is kept ❖ Introduce new and relevant vocabularies ❖ Use short and clear sentences ❖ Give emphasis on visual lecture and ensure the attention of the trainees ❖ Avoid movement during lecture time ❖ Present the lecture in video format ❖ Summarize main points	❖ Organize the class room seating arrangement to be accessible to trainees ❖ Speak loudly ❖ Ensure the attention of the trainees ❖ Present the lecture in video format ❖ Ensure the attention of the trainees	❖ Organize the class room seating arrangement to be accessible for wheelchairs users. ❖ Facilitate and support the trainees who have severe impairments on their upper limbs to take note ❖ Provide Orientation on the physical feature of the computer Lab
Demonstration	❖ Conduct close follow up ❖ Use verbal description ❖ Provide special attention in the process of guidance	❖ use Sign language interpreter ❖ Use video recorded material ❖ Ensure attention of the trainees ❖ Provide structured training	❖ Illustrate in clear & short method ❖ Use Video recorded material	❖ Facilitate and support the trainees having severe upper limbs impairment to operate

	❖ facilitate the support of peer trainees ❖ Prepare & use simulation	❖ Show clear and short method ❖ Use gesture ❖ provide tutorial support (if necessary)	❖ Ensure the attention of the trainees ❖ Provide tutorial support (if necessary)	equipment's/machines ❖ Assign peer trainees to assist ❖ Conduct close follow up ❖ Provide tutorial support (if necessary
Individual assignment	❖ prepare the assignment questions in large text ❖ Encourage the trainees to prepare and submit the assignment in large texts ❖ Make available recorded assignment questions ❖ Facilitate the trainees to prepare and submit the assignment in soft or hard copy	❖ Use sign language interpreter ❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	❖ Provide briefing /orientation on the assignment ❖ Provide visual recorded material	
Computer Based Training	❖	❖	❖	
ASSESSMENT METHODS:				
Interview	❖	❖ Use sign language interpreter ❖ Ensure or conform whether the	❖ Speak loudly ❖ Using sign language	Use written response as an option for the trainees

		proper communication was conducted with the trainee through the service of the sign language interpreter ❖ Use short and clear questioning ❖ Time extension	interpreter if necessary	having speech challenges
Written test	❖ Prepare the exam in large texts ❖ Use interview as an option if necessary ❖ Prepare the exam in audio format ❖ Assign human reader ❖ (if necessary) ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, True or False, matching and short answers ❖ Avoid essay writing ❖ Time extension	❖ Prepare the exam using short sentences, multiple choices, true or false, matching and short answers if necessary.	❖ Use oral response as an option to give answer for trainees having severe upper limb impairment ❖ Time extension for trainees having severe upper limb impairment
Demonstration Observation	❖ Brief the instruction or provide them in large text ❖ Time extension	❖ Use sign language interpreter ❖ Brief on the instruction of the exam ❖ Provide activity-based/ practical assessment method ❖ Time extension	❖ Provide activity based assessment ❖ Brief on the instruction of the exam ❖ Use loud voice ❖ Time extension	❖ Provide activity based assessment ❖ Conduct close follow up ❖ Time extension

ASSESSMENT CRITERIA:

Lo1. Assess technical and user documentation

- Current version of technical and user documentation is reviewed based on the latest operational procedures

- Accuracy of technical and user documentation is compared with current system functionality

- Inaccuracies are identified and documented for future reference

Lo2. Update procedures

- Operational procedure requirements are determined using review outcomes.

- Operating procedures are developed / updated for the system.

- Proposed operating procedures are submitted to appropriate person

  .

LO3. Update documentation

- Feedback is reviewed and appropriate changes are made as needed.

- Technical and user documentation are updated to incorporate changes.

- Technical and user documentation are submitted to appropriate person for final approval.

- Technical and user documentation are distributed as agreed with appropriate person

LO4: Work in Team Environment

- Role and objective of the team is identified from available sources of information

- Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources

- Individual role and responsibilities within the team environment is identified

- Roles and responsibility of other team members are identified and recognized

- Reporting relationships within team and external to team are identified

	Updating and Documenting Operational Procedures (EIS HNS2 M11 0322)			
Item No.	**Category/Item**	**Description/ Specifications**	**Quantity**	**Recommended Ratio (Item: Trainee)**
A.	*Learning Materials*			
1.	TTLM	TTTLM prepared by the trainer	25	1:1
2.	Reference Books			
2.1	Introduction to the Personal Computer	IT Essentials: PC Hardware and Software Course Booklet, V 5	25	1:1
B.	*Learning Facilities & Infrastructure*			
1.	Computer Lab	Well equiped	1	1:25
2.	Projector	LCD	1	1:25
C.	*Consumable Materials*			
1.	CD	R/RW	25	1:1
2	DVD	R/RW	25	1:1
5	Paper	A4 size	1 Dosta	1:25
6	Cartridge	Black	1	1:25
D.	*Tools and Equipment's*			
1.	Printers		1	1:25
2	Computers	RAM: 2GB and above HDD: 250 GB and above	25	1:1
3	Application Software	MS Office 2007 and above	25	1:1
4	Operating System	Windows 7 and	25	1:1

			above		
5	Anti-Virus Software	latest	1	1:25
6	Desktop Computer including its peripherals	Core I5, RAM=4GB, HDD=500GB	25	1:1
7	Multimedia projector	- LCD	1	Per section
8	Printer	- Capability of A3 printing - color printing capability	1	Per section
9	Network toolkit	- set/case	5	1:5
10	Maintenance toolkit	- set/case	5	1:5
11	Scanner	- Any	2	1:13
12	Web cam	-8piexel and above	2	1:13

The trainers who developed the curriculum

No	Name	Qualification	Educational background	Region	College	Mobile number	E-mail
1	Mohammed Abrar Shafi	MSc	Information System	Addis Ababa	Ethiopian Technical University	0911062776	buzu.moha@gmail.com
2	Getenesh Osamo Wakocho	MSc	ITM	SNNP	Hosahna PTC	0923816933	gete.osamo@gmail.com
3	Zerihun Abate Duguma	MSc	ITM	Oromiya	Sebeta PTC	0911858358	zedoabata2017@gmail.com
4	Endalew Alemu Ayenew	MSc	IT	Amhara	Bahir Dar PTC	0918701460	endomark_2@yahoo.com
5	Habtamu Zewdu G/Tsadik	MSc	Information System	Addis Ababa	Misrak PTC	0921685804	habtamu2012z@gmail.com
6	Alemayehu Tesfaye Arga	MSc	IT	Sidama	DPC	0912808069	alextesfaye1620@gmail.com