

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

QCF LEVEL 1 COMPUTER HARDWARE MAINTENANCE AND REPAIRS ASSISTANT

Mandatory Units

| S/No /Unit No | Reference Number | NOS Title | Credit Value | Guided Learning Hours | Remark |
|---------------|------------------|----------------------------------------------------------------------------------------|--------------|-----------------------|-------------|
| 1 | ICT/CMR/001/L1 | Apply Occupational Health and Safety Procedures in Computer Operations and Maintenance | 3 | 30 | Level QCF 1 |
| 2 | ICT/CMR/002/L1 | Use Communication Skills Effectively in Workplace | 3 | 30 | Level QCF 1 |
| 3 | ICT/CMR/003/L1 | Appreciate Basic Computer Operations and Maintenance | 3 | 30 | Level QCF 1 |
| 4 | ICT/CMR/004/L1 | Perform Tasks Using Computer Operating Systems and Application Packages | 3 | 30 | Level QCF 1 |
| 5 | ICT/CMR/005/L1 | Perform Basic Computer Maintenance Using Software Tools | 3 | 30 | Level QCF 1 |
| 6 | ICT/CMR/006/L1 | Identify Internal and External Components of Computers | 3 | 30 | Level QCF 1 |
| | | | 18 | 180 | |

Optional Units

| S/No /Unit No | Reference Number | NOS Title | Credit Value | Guided Learning Hours | Remark |
|---------------|------------------|---------------------------------------------------------------|--------------|-----------------------|--------|
| 7 | ICT/CMR/007/L1 | Apply Ethical Principles in Work Environment | 3 | 30 | |
| 8 | ICT/CMR/008/L1 | Understand Fundamentals and Applications of Basic Electricity | 3 | 30 | |

NOTE: This is a 21 credit qualification, to achieve this qualification; Learners are required to achieve 18 credits from mandatory units and 3 credits from the optional units. Each Credit is equivalent to approx. 10 Guided Learning Hours (GLH). The Total Learning Hours will therefore consist of the GLH *plus* the independent learning hours of the candidate, which is generally 50% – 150% of the GLH. ***The actual Total Learning Hours for each Credit will then be a minimum of 15 hours.***

Qualification Purpose:

This qualification is about a Computer Hardware Maintenance and Repairs Trade that is responsive to and reflects workers and employers’ need in the work environment for all professional areas. It can be taken by all learners who wish to acquire skills and develop competencies for the purpose of employment or enterprise creation.

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 1: Apply Occupational Health and Safety Procedures in Computer Operations and Maintenance

Unit Reference Number: ICT/CMR/001/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is to create awareness and right attitude for learners to observe occupational health and safety procedures in work environment.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignments (ASS)
4. Witness Testimony (WT)

UNIT 01

| LEARNING OBJECTIVE (LO) The learner will: | | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | | Evidence Ref. Page No. | | | |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|------------------------|--|--|--|
| LO 1: Understand Occupational Health and Safety Issues Related to Computer Operations and Maintenance | 1.1 | Explain occupational health and safety standards | | | | | | | | |
| | 1.2 | Explain discomfort and disorders associated with computer operations such as: <ol style="list-style-type: none"> i. Pain in the lower and upper back; ii. Stiff neck; iii. Sore shoulders; iv. Arching wrists; v. Dry eyes; vi. Eyestrains and sore eyes; vii. Glare; viii. Musculoskeletal disorder | | | | | | | | |
| | 1.3 | Explain the application of the following to ensure comfort and safety: <ol style="list-style-type: none"> i. Safe screen distance from users; ii. Sitting posture; iii. Keyboard position; iv. Room lighting; v. Exercise/Break; vi. Anti-glare screens; | | | | | | | | |
| | 1.4 | Identify health and safety risk in computer operations and maintenance such as: electrostatic discharge, electric surge, and electric shock | | | | | | | | |
| | 1.5 | Use occupational health and safety equipment, gears and tools such as: anti-static wrist bands, gloves, coverall, boots, fire extinguishers and first aid box | | | | | | | | |
| | 1.6 | Explain relevant safety precautions and rules in computer maintenance and repairs | | | | | | | | |
| | LO 2: Understand Environmental Issues in Computer Operations and Maintenance | 2.1 | Explain environmental hazards associated with computer operations and maintenance | | | | | | | |
| 2.2 | | Identify tools and equipment for mitigating environmental hazards | | | | | | | | |
| 2.3 | | Use environmental hazard mitigating tools and equipment | | | | | | | | |
| 2.4 | | Identify risks associated with water, air and land pollution at the work place | | | | | | | | |
| 2.5 | | Explain methods and possibilities to avoid environmental pollution | | | | | | | | |
| 2.6 | | Apply environmental protection methods in selected activities | | | | | | | | |

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| LO 3: Demonstrate the Ability to Observe Personal Safety at the Workplace | 3.1 | Observe safety rules in the workplace | | | | | | | | | | | | | | | | | | |
| | 3.2 | Use appropriate personal protective equipment correctly | | | | | | | | | | | | | | | | | | |
| | 3.3 | Identify selected personal protective equipment | | | | | | | | | | | | | | | | | | |
| | 3.4 | Maintain clean working surrounding and environment | | | | | | | | | | | | | | | | | | |
| | 3.5 | Identify safety tags, signs and symbols | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| LO 4: Demonstrate the Applications of First Aid | 4.1 | Identify first aid materials | | | | | | | | | | | | | | | | | | |
| | 4.2 | Select appropriate first aid materials for defined situations | | | | | | | | | | | | | | | | | | |
| | 4.3 | Maintain first aid materials at the workplace | | | | | | | | | | | | | | | | | | |
| | 4.4 | Carry out first aid procedures for defined situations | | | | | | | | | | | | | | | | | | |
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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 2: Use Communication Skills Effectively in Workplace

Unit Reference Number: ICT/CMR/002/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The aim of the unit is to introduce the learner to the basic communication skills that will enhance their performance at the workplace.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignments (ASS).

UNIT 02

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | Evidence Ref. Page No. | | | |
|-----------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| The learner will: | | The learner can: | | | | | | | | |
| LO 1: Discuss Verbal and Non-verbal Means of Communications | 1.1 | Identify verbal means of communication | | | | | | | | |
| | 1.2 | Identify non-verbal means of communication | | | | | | | | |
| | 1.3 | Explain use of simple verbal means to pass on necessary information | | | | | | | | |
| | 1.4 | Explain non-verbal means to pass on necessary information e.g. body language | | | | | | | | |
| | 1.5 | Interpret symbols and signs appropriately | | | | | | | | |
| | | | | | | | | | | |
| LO 2: Develop the Ability to Identify the Sources of Information in a Work Environment | 2.1 | Identify sources of information in an organizational work environment | | | | | | | | |
| | 2.2 | Relate appropriately with sources of information | | | | | | | | |
| | 2.3 | Use various information flow systems in work environment | | | | | | | | |
| | 2.4 | Use information to avoid challenges in work situations | | | | | | | | |
| | 2.5 | Report findings in accordance to procedure in work environment | | | | | | | | |
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| LO 3: Demonstrate the Use of Various Communication Means in a Work Environment | 3.1 | Identify various communications equipment in work environment | | | | | | | | |
| | 3.2 | Use effectively various communications equipment in work environment | | | | | | | | |
| | 3.3 | Pass information effectively to right personnel | | | | | | | | |
| | 3.4 | Pass information effectively using symbols, signs and codes. | | | | | | | | |
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| LO 4: Understand the Basics of Pronunciation | 4.1 | Identify vowel sounds | | | | | | | | |
| | 4.2 | Explain diphthongs sounds | | | | | | | | |
| | 4.3 | Distinguish between long sound and short sound | | | | | | | | |
| | 4.4 | Identify components/groups of sound that makes the alphabets | | | | | | | | |
| | | | | | | | | | | |
| LO 5: Demonstrate ability to read | 5.1 | Discuss the term reading | | | | | | | | |
| | 5.2 | State reading techniques such as: i. Browsing; ii. Skimming; iii. Scanning | | | | | | | | |
| | 5.3 | Explain the differences and purpose of each reading technique | | | | | | | | |

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | | Evidence Ref. Page No. | | | |
|--------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--|--|--|--|-------------------------------|--|--|--|
| The learner will: | | The learner can: | | | | | | | | | |
| | 5.4 | Practice the following: i. Reading comprehension with passage; ii. Paragraph Reading (Recall); iii. Reading Aloud; iv. Reading Silently | | | | | | | | | |

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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 3: Appreciate Basic Computer Operations and Maintenance

Unit Reference Number: ICT/CMR/003/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is to introduce learners to the basic skills needed to operate computers effectively and maintain them to minimise system downtimes in work environment.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. **Simulation is not allowed** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignment (ASS).

UNIT 03

| LEARNING OBJECTIVE (LO) | PERFORMANCE CRITERIA | Evidence Type | | | | Evidence Ref. Page No. | | | |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| The learner will: | The learner can: | | | | | | | | |
| LO 1: Describe the Operational Principles of Computer Systems | 1.1 Discuss the following: i. Basics of computers; ii. Historical development of computers; iii. Applications of computers | | | | | | | | |
| | 1.2 Identify the classes of personal computers namely: i. Desktop; ii. Mobile | | | | | | | | |
| | 1.3 Explain the implications of computers on the society | | | | | | | | |
| | 1.4 Explain how to operate a computer system | | | | | | | | |
| | 1.5 Discuss the basic components of computers: i. Input; ii. Output; iii. Central processing unit; iv. Memory and its types; v. Storage Devices | | | | | | | | |
| | 1.6 Identify the following input and output devices: | | | | | | | | |

| LEARNING OBJECTIVE (LO) The learner will: | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | | Evidence Ref. Page No. | | | |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| | i. Keyboard; ii. Mouse; iii. Microphone; iv. Scanner; v. PC cameras (Webcam); vi. Monitors; vii. Printers; viii. Speakers; ix. Projector | | | | | | | | |
| | 1.7 Illustrate how to setup new computer systems | | | | | | | | |
| LO 2: Understand Installable File System, Windows Core Operating System, Windows 32-bit and 64-bit Systems | 2.1 Identify the main parts of Windows operating system | | | | | | | | |
| | 2.2 Identify icons, bars and elements of File Explorer in Windows | | | | | | | | |
| | 2.3 Use File Explorer to work in files and folders | | | | | | | | |
| | 2.4 Using Windows Help | | | | | | | | |
| | 2.5 Describe the file system of Windows | | | | | | | | |
| | 2.6 Identify the basic file extensions such as: i. jpg, png, gif (Pictures); ii. doc, docx (Word documents); iii. txt (Text files); iv. mp3, wav, mp4, 3gp, avi (Audio/Video) | | | | | | | | |
| LO 3: Describe the Booting Process of Computers | 3.1 Explain the term booting | | | | | | | | |
| | 3.2 State types of booting: i. Warm; ii. Cold | | | | | | | | |
| | 3.3 Explain the steps involved in booting Windows 7/8/Vista and newer versions | | | | | | | | |
| | 3.4 Outline the procedures of cold and warm booting | | | | | | | | |
| LO 4: Understand the Basic Principles of Computer Networks | 4.1 Describe computer network and its uses | | | | | | | | |
| | 4.2 State the classifications of networks: i. Local Area Network (LAN) ii. Metropolitan Area Network (MAN) iii. Wide Area Network (WAN) | | | | | | | | |
| | 4.3 Explain the differences in types of network listed in 4.2 | | | | | | | | |
| | 4.4 Identify the following components of a simple computer network: i. Switches; ii. Routers; iii. CAT-5e Ethernet cable; | | | | | | | | |

| LEARNING OBJECTIVE (LO) The learner will: | PERFORMANCE CRITERIA The learner can: | Evidence Type | Evidence Ref. Page No. | | | | | | | |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|--|--|--|--|--|--|--|
| | iv. RJ-45 Connectors; v. Network Interface Cards; vi. Access point/Wireless routers | | | | | | | | | |
| | 4.5 Explain the meaning of the following basic terms: i. Topology; ii. Bandwidth; iii. Server; iv. Clients | | | | | | | | | |
| LO 5: Understand Classes of Maintenance and Their Applications to Computers | 5.1 Explain preventive and corrective maintenance | | | | | | | | | |
| | 5.2 Outline the benefits of carrying out preventive and corrective maintenance | | | | | | | | | |
| | 5.3 Outline when to carry out preventive and corrective maintenance | | | | | | | | | |
| | 5.4 State the characteristics of computer hardware maintenance | | | | | | | | | |
| | 5.5 Perform the basic preventive maintenance on computers | | | | | | | | | |
| LO 6: Use the Basic Tools Needed for Computer Hardware Maintenance and Repairs | 6.1 Explain the importance of tools in computer hardware maintenance and repairs | | | | | | | | | |
| | 6.2 Outline the functions of the following hardware maintenance tools: i. Soldering irons; ii. Set of pliers; iii. Cutters; iv. Set of screw drivers; v. Multi-meters; vi. Wire strippers; vii. Soldering stations; viii. Set of allen keys; ix. Air blowers | | | | | | | | | |
| | 6.3 Use tools listed in 6.2 above | | | | | | | | | |
| | 6.4 Identify the appropriate equipment and facilities needed to set up a computer maintenance and repairs workshop | | | | | | | | | |
| | 6.5 Explain the risks involved in using incorrect tools to carry out maintenance and repairs | | | | | | | | | |

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| Learners Signature: | Date: |
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| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 4: Perform Tasks using Common Computer Operating Systems and Application Packages

Unit Reference Number: ICT/CMR/004/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is to enable learners to understand operating systems and use the application packages to perform general and specific tasks related to personal and office work, entertainment and other useful purposes.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is not allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignments (ASS)
4. Witness Testimony (WT).

UNIT 04

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | Evidence Ref. Page No. | | | |
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| The learner will: | | The learner can: | | | | | | | | |
| LO 1: Understand Different Terms and Terminology used In Computer Hardware Maintenance and Repairs | 1.1 | Explain the appropriate terms used in computer systems | | | | | | | | |
| | 1.2 | Identify important computer terms and their definitions | | | | | | | | |
| | 1.3 | Explain the process involved when using computer system terminology | | | | | | | | |
| | 1.4 | Apply the appropriate computer system acronyms used by computer repairs technicians | | | | | | | | |
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| LO 2: Demonstrate the Ability to Use Computer Operating Systems | 2.1 | Explain the concept of Operating Systems | | | | | | | | |
| | 2.2 | Explain the functions, operations and classifications of Operating Systems e.g. Mac OS, LINUX and Windows | | | | | | | | |
| | 2.3 | Operate old and current versions of Windows Operating Systems | | | | | | | | |
| | | | | | | | | | | |
| LO 3: Demonstrate the Ability to Use Application Software Packages | 3.1 | Identify different types of application software packages in Windows Operating Systems such as: <ul style="list-style-type: none"> i. Spreadsheet Packages (Microsoft Excel, Lotus) ii. Word Processing Packages (MS Word, Wordpad, Notepad) iii. Graphical Packages (Coreldraw, Photoshop, Visio) iv. Database Packages (Microsoft Access, Oracle) v. Architectural Packages (AutoCAD, Revit) vi. Custom Software e.g (Payroll, Automart) | | | | | | | | |
| | 3.2 | Perform installation and un-installation of application software packages | | | | | | | | |
| | 3.3 | Use the software packages mentioned in 3.1 above. | | | | | | | | |
| | 3.4 | State the differences between Application Software and System Software | | | | | | | | |
| | | | | | | | | | | |
| LO 4: Demonstrate the Ability to Use Internet, World Wide Web and e-mail | 4.1 | Connect computers to Internet using Modem or Wi-Fi | | | | | | | | |
| | 4.2 | Use World Wide Web to search for relevant information | | | | | | | | |
| | 4.3 | Set-up e-mail accounts to send messages and attach documents | | | | | | | | |

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | | Evidence Ref. Page No. | | | | |
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| The learner will: | | The learner can: | | | | | | | | | | |
| | 4.4 | Backup large documents using cloud storage services such as: <ul style="list-style-type: none"> i. Google Drive; ii. SkyDrive; iii. One Drive; iv. Yahoo Mail Storage; v. Office 365 | | | | | | | | | | |
| | 4.5 | Demonstrate multimedia communication using the Internet | | | | | | | | | | |
| | 4.6 | Solve common problems associated with Internet connectivity and web browsing | | | | | | | | | | |
| | | | | | | | | | | | | |
| LO 5: Perform installation, upgrading and Debugging of Windows Operating System | 5.1 | Identify the current Windows Operating System for upgrade | | | | | | | | | | |
| | 5.2 | Identify the system requirements before installation | | | | | | | | | | |
| | 5.3 | Perform files backup and restore | | | | | | | | | | |
| | 5.4 | Undertake hard-disk partitioning | | | | | | | | | | |
| | 5.5 | Use command prompt to fix Operating System problems | | | | | | | | | | |

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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 5: Perform Basic Computer Maintenance Using Software Tools

Unit Reference Number: ICT/CMR/005/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is to expose learners to requisite skills needed to maintain computers using software diagnostic tools.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is not allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignments (ASS)
4. Witness Tetimony (WT)
5. Work Product (WP)

UNIT 05

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | Evidence Ref. Page No. | | | |
|-----------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| The learner will: | | The learner can: | | | | | | | | |
| LO 1: Apply the Basic Software Maintenance tools | 1.1 | Use the Control Panel to adjust computer settings | | | | | | | | |
| | 1.2 | Scan the computer to check for and repair errors | | | | | | | | |
| | 1.3 | Perform defragmentation procedure for hard drive | | | | | | | | |
| | 1.4 | Uninstall unwanted programs or apps | | | | | | | | |
| | 1.5 | Use Disk Cleanup tool to remove unused files | | | | | | | | |
| | 1.6 | Configure computers to run automatic maintenance schedules daily | | | | | | | | |
| | 1.7 | Apply Windows Backup tool to store computer data using external hard disk, DVD, USB memory sticks and cloud backup | | | | | | | | |
| | | | | | | | | | | |
| LO 2: Demonstrate the Ability to Use Spyware and Malware Protection | 2.1 | Identify the importance of Spyware and Malware definitions in computers | | | | | | | | |
| | 2.2 | Use Spyware and Malware definitions to scan computers | | | | | | | | |
| | 2.3 | Update the Spyware and Malware definitions | | | | | | | | |
| | 2.4 | Perform actions on the detected harmful or unwanted items in computers | | | | | | | | |
| | | | | | | | | | | |
| LO 3: Perform installation of Anti-Virus Software and Internet Security | 3.1 | Identify symptoms of computers infected with virus | | | | | | | | |
| | 3.2 | Install Anti-Virus software and Internet Security such as AVG, Norton, Avast, McAfee, Kaspersky | | | | | | | | |
| | 3.3 | Activate Anti-Virus software and Internet Security | | | | | | | | |
| | 3.4 | Scan computers using Anti-Virus software and Internet Security | | | | | | | | |
| | 3.5 | Update Anti-Virus software and Internet Security | | | | | | | | |
| | 3.6 | Renew expired Anti-Virus software and Internet Security | | | | | | | | |
| | | | | | | | | | | |
| LO 4: Carry out Formatting of Hard drives of Computers | 4.1 | State the aims of formatting hard drives of computers | | | | | | | | |
| | 4.2 | Format hard drive of computer using formatting disk | | | | | | | | |
| | 4.3 | Format a system using external hard-drive basically for mini laptop | | | | | | | | |
| | | | | | | | | | | |
| LO 5: | 5.1 | Identify missing PC drivers | | | | | | | | |

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | Evidence Ref. Page No. | | | |
|----------------------------------------|-----|----------------------------------------------------------------------------------------|----------------------|--|--|--|-------------------------------|--|--|--|
| The learner will: | | The learner can: | | | | | | | | |
| Install Personal Computer (PC) Drivers | 5.2 | Install missing PC drivers through the following methods: i. Online; ii. Offline | | | | | | | | |
| | 5.3 | Scan hardware changes after installation of drivers | | | | | | | | |
| | 5.4 | Test installed drivers and functionality of the components | | | | | | | | |

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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

NATIONAL VOCATIONAL QUALIFICATION

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National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 6: Identify Internal and External Components of Computers

Unit Reference Number: ICT/CMR/006/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: This unit is to enable learners to identify, select and examine the functionality of internal and external components of computers

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is not allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignments (ASS)
4. Witness Testimony (WT)

UNIT 06

| LEARNING OBJECTIVE (LO) | | PERFORMANCE CRITERIA | Evidence Type | | | | Evidence Ref. Page No. | | | |
|----------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| The learner will: | | The learner can: | | | | | | | | |
| LO 1: Identify the External Components of Computer Systems | 1.1 | Identify external components of computers | | | | | | | | |
| | 1.2 | Explain the main functions of external components of computers | | | | | | | | |
| | 1.3 | Identify computer external devices that use universal serial bus (USB) ports | | | | | | | | |
| | 1.4 | Identify computer external devices that use serial and parallel ports | | | | | | | | |
| | 1.5 | Identify individual external components of computers | | | | | | | | |
| LO 2: Identify the Internal Components of Computer Systems | 2.1 | Identify individual internal components of computers such as: i. Motherboard; ii. video graphic adapter (VGA) card; iii. hard disks; iv. power pack; v. network interface cards; vi. memory | | | | | | | | |
| | 2.2 | Explain the main functions of the internal components of computer systems as mentioned in 2.1 above | | | | | | | | |
| | 2.3 | Demonstrate the relationship of each component in 2.1 to one another | | | | | | | | |
| | 2.4 | Identify Serial Advanced Technology Attachment (SATA) and other internal cables of computers | | | | | | | | |
| LO 3: Demonstrate the Ability to Identify Motherboards | 3.1 | Identify different types of motherboards as essential component of computers | | | | | | | | |
| | 3.2 | Identify the components of a motherboard | | | | | | | | |
| | 3.3 | Explain the main functions of the motherboard components | | | | | | | | |
| | 3.4 | Identify expansion slots and cards in the motherboards | | | | | | | | |
| LO 4: Understand types of computer memory | 4.1 | Explain the uses of computer memory | | | | | | | | |
| | 4.2 | Explain the word volatile and non-volatile memory | | | | | | | | |
| | 4.3 | Identify types of computer memory: i. Random Access Memory (RAM) ii. Read only memory (ROM) iii. Programmable Read Only Memory (PROM) | | | | | | | | |
| | 4.4 | Differentiate between the types of computer memory listed in 4.1 | | | | | | | | |
| | 4.5 | Demonstrate how to enter BIOS setup | | | | | | | | |

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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 7: Apply Ethical Principles in Work Environment

Unit Reference Number: ICT/CMR/007/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The unit is to educate learners on the need to exhibit ethical conduct or behaviour in work environment.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignments (ASS)
4. Witness Testimony (WT)

UNIT 07

| LEARNING OBJECTIVE (LO) The learner will: | | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | | Evidence Ref. Page No. | | | |
|--------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--|--|--|-------------------------------|--|--|--|
| LO 1: Understand Work Environment | 1.1 | Identify management , staff, customers and suppliers in work environment | | | | | | | | |
| | 1.2 | Explain the following obligations of employers and employees in an organisation: i. respect the views and decision of other people; ii. bring about good in all actions; iii. harmless to others ; iv. treat all people fairly and equally; v. accountable for all actions; vi. focus on details | | | | | | | | |
| | 1.3 | Explain the importance of the following attributes at work place i. punctuality; ii. regularity; iii. keeping promises; iv. being reliable; v. meeting deadlines | | | | | | | | |
| | 1.4 | Explain how staff should relate with their employers, superiors and colleagues | | | | | | | | |
| LO 2: Demonstrate the Knowledge of Customer Relationship | 2.1 | Explain the features of customers | | | | | | | | |
| | 2.2 | Identify the challenges in customer relationship | | | | | | | | |
| | 2.3 | Discuss good customer care | | | | | | | | |
| | 2.4 | Manage customer relationship | | | | | | | | |
| LO 3: Observe Rules and Regulations in Workplace | 3.1 | Explain rules and regulations in the workplace | | | | | | | | |
| | 3.2 | Explain the general operational procedure in a computer hardware maintenance and repairs workshop | | | | | | | | |
| | 3.3 | Discuss dress code in a computer hardware maintenance and repairs workshop | | | | | | | | |

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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |

NATIONAL VOCATIONAL QUALIFICATION

ICT SECTOR

National Vocational Qualification

LEVEL 1 ICT SECTOR

Unit 8: Understand Fundamentals and Applications of Basic Electricity to Computer Hardware Maintenance and Repairs

Unit Reference Number: ICT/CMR/008/L1

QCF Level: 1

Credit Value: 3

Guided Learning Hours: 30

Unit Purpose: The unit is about introducing Basic Electricity to learners and how to relate it to computer operations and maintenance

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. ***Simulation is not allowed*** in this unit and level.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Assignment (ASS)
4. Witness Testimony (WT)

UNIT 08

| LEARNING OBJECTIVE (LO) The learner will: | PERFORMANCE CRITERIA The learner can: | | Evidence Type | | | | Evidence Ref. Page No. | | | |
|----------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| LO 1: Understand Electricity and its Importance | 1.1 | Explain electricity and its importance to the computer operation and maintenance | | | | | | | | |
| | 1.2 | Explain the meaning of the following in context of electric current: i. Atoms; ii. Protons; iii. Neutrons; iv. Electrons | | | | | | | | |
| | 1.3 | Discuss the main characteristics of electricity: i. Current; ii. Voltage; iii. Resistance | | | | | | | | |
| | 1.4 | State the SI units of the electrical quantities listed in 1.3 above | | | | | | | | |
| | 1.5 | State the differences between direct current (DC) and alternating current (AC) voltage | | | | | | | | |
| | 1.6 | Explain the four factors affecting the resistance of a conductor namely: i. Length; ii. Cross-sectional area; iii. Temperature; iv. Resistivity | | | | | | | | |
| | 1.7 | Draw simple diagrams to illustrate voltage, current and resistance in electric circuits | | | | | | | | |
| LO 2: Understand the Concept and Application of DC Voltage | 2.1 | State the Ohm's law | | | | | | | | |
| | 2.2 | Discuss the applications of Ohm's law in home and office equipment | | | | | | | | |
| | 2.3 | Write the mathematical expression of Ohm's law | | | | | | | | |
| | 2.4 | Explain the following DC circuits with aid of simple diagrams: i. Series; ii. Parallel | | | | | | | | |
| | 2.5 | Perform simple calculations on DC circuits using Ohm's laws | | | | | | | | |
| | 2.5 | Define electrical power and its mathematical expression | | | | | | | | |
| | 2.6 | State the SI unit and importance of power | | | | | | | | |
| 2.7 | Perform simple power calculations in real life situations | | | | | | | | | |
| LO 3: | 3.1 | Discuss the basic electromagnetic principles due to current flowing through | | | | | | | | |

| LEARNING OBJECTIVE (LO) The learner will: | PERFORMANCE CRITERIA The learner can: | Evidence Type | | | | Evidence Ref. Page No. | | | |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|--|--|------------------------|--|--|--|
| Understand the Concepts of AC Voltage | conductors | | | | | | | | |
| | 3.2 State the applications of electromagnetism | | | | | | | | |
| | 3.3 Explain the concept of electromagnetic induction | | | | | | | | |
| | 3.4 Explain alternating current (AC) voltage and how it is generated | | | | | | | | |
| | 3.5 Describe the two types of AC voltage with the aid of diagrams: i. Single phase; ii. Three phase | | | | | | | | |
| | 3.6 Explain with the aid of a sine wave, the following terms associated with AC voltage: i. Peak value; ii. Peak-to-Peak value; iii. Instantaneous value; iv. Root Mean Square value | | | | | | | | |
| LO 4: Apply conductors, insulators and semi-conductors in Computer Hardware Maintenance | 4.1 Explain the meaning of the following: i. Conductor; ii. Insulators; iii. Metals; iv. Non-metals; v. Alloys; vi. Semiconductors | | | | | | | | |
| | 4.3 Identify uses of metals and alloys in Computer Hardware Maintenance and Repairs trade | | | | | | | | |
| | 4.4 Identify uses of insulators in Computer Hardware Maintenance and Repairs trade | | | | | | | | |
| | 4.5 Identify uses of semiconductors in Computer Hardware Maintenance and Repairs trade | | | | | | | | |
| LO 5: Identify Instruments to Measure Physical Quantities | 5.1 State the basic and relevant derived physical quantities measured in Computer Operations and Maintenance such as: i. Current; ii. Voltage; iii. Power; iv. Resistance; v. Energy; vi. Frequency/clock speed; vii. Inductance; viii. Capacitance; | | | | | | | | |
| | 5.2 Explain the importance of these quantities in Computer Operations and Maintenance | | | | | | | | |
| | 5.3 Identify the instruments that are used to measure the quantities listed in 5.1 | | | | | | | | |

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| Learners Signature: | Date: |
| Assessors Signature: | Date: |
| IQA Signature (if sampled) | Date: |
| EQA Signature (if sampled) | Date: |