

**NATIONAL VOCATIONAL  
QUALIFICATION  
LEVEL 2**

**GSM REPAIRS AND  
MAINTENANCE**

# NATIONAL VOCATIONAL QUALIFICATION

## GSM REPAIRS AND MAINTENANCE

### QCF LEVEL 2- GSM MAINTENANCE TECHNICIAN II

#### GENERAL INFORMATION

##### QUALIFICATION GOAL

The National Vocational Qualification in GSM Repairs and Maintenance and is designed to produce skilled GSM Maintenance Technicians who should be able to install GSM and mobile phone software and carry out repairs, and establish a GSM and mobile phone business.

##### QUALIFICATION OBJECTIVES

A product of National Vocational Qualification GSM Repairs and Maintenance should be able to:-

- i. Work safely in a GSM Repairs and Maintenance Workshop.
- ii. Communicate effectively and understand the terms and terminologies required to operate in a GSM Repairs and Maintenance work environment.
- iii. Install basic GSM and mobile phone software.
- iv. Carryout GSM and mobile phone hardware faults.
- v. Establish a GSM and Mobile Phone Spare Parts Business.
- vi. Establish GSM and Mobile Phone Workshop Business.

#### Mandatory Units

S/No /Unit No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Remark
1	ICT/GRM/001/L2	Occupational Health and Safety in GSM and Mobile Phones Repairs and Maintenance	2	20	Level 2
2	ICT/GRM/002/L2	Communication in GSM and Mobile Phones Repairs and Maintenance	2	20	Level 2
3	ICT/GRM/003/L2	Repair Hardware Faults in GSM and Mobile Phones	6	60	Level 2

4	ICT/GRM/004/L2	Install GSM and Mobile Phones Software	6	60	Level 2
5	ICT/GRM/005/L2	Establish GSM and Mobile Phone Spare Parts Business	3	30	Level 2
6	ICT/GRM/006/L2	Establish GSM and Mobile Phone Workshop Business	3	30	Level 2
			22	220	

**NOTE:** This is a 22 credit qualification, to achieve this qualification; Learners are required to achieve 22 credits. All units are compulsory for the learners. 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.***

# National Vocational Qualification

## LEVEL 2 GSM REPAIRS AND MENTAINANCE

### **Unit 1: OCCUPATIONAL HEALTH AND SAFETY**

**Unit Reference Number: ICT/GRM/001/L2**

**QCF Level: 2**

**Credit Value: 2**

**Guided Learning Hours: 20**

**Unit Purpose:** *This Unit is aimed at providing the learner with the requisite health and safety measures requirement when working in a GSM and mobile phone workshop.*

#### **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/or 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. Witness Testimony (WT)
4. Assignment (ASS)

## UNIT 01: OCCUPATIONAL HEALTH AND SAFETY

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. No.	Page No.
The learner will:		The learner can:						
<b>LO 1:</b> Apply knowledge of safety measures in GSM and mobile phone workshop.	1.1	Observe safety procedure in GSM mobile workshop.						
	1.2	Adhere to appropriate safety needed in a GSM workshop.						
	1.3	Identify safety facility in GSM and mobile phone workshop.						
	1.4	State the importance of safety equipment in a GSM and mobile phone workshop.						
<b>LO 2:</b> Use safety equipment in GSM and mobile phone workshop.	2.1	Identify the basic safety equipment in a GSM and mobile phone workshop.						
	2.2	Use hardware safety equipment in a GSM and mobile phone workshop.						
	2.3	State the advantages of using the appropriate safety equipment in a GSM and mobile phone workshop.						
<b>LO 3:</b> Apply safety precautions in GSM and mobile phone equipment.	3.1	Identify preventive/corrective steps for safety equipment in a GSM and mobile phone workshop.						
	3.2	Explain how to maintain hygienic, safe and secured GSM and Mobile phone workplace.						
	3.3	Use safety equipment in a GSM and mobile workshop as required.						
	3.4	Explain the advantages of using the correct tools during GSM and mobile phone repairs.						
<b>LO 4:</b> Apply appropriate precautions while working on GSM and mobile phones.	4.1	Use simple techniques for working on a GSM and mobile phones.						
	4.2	Explain the precautions observed when dismantling GSM and mobile phones.						
	4.3	Use the correct procedures when coupling GSM and mobile phone that are uncoupled.						
<b>LO 5:</b> Demonstrate knowledge of personnel health and hygiene in GSM and mobile phone work shop	5.1	State own responsibility under health and safety.						
	5.2	State general rules on hygiene that must be observed in a GSM and Mobile phone workshop.						
	5.3	State the correct clothing, footwear, and head wear that should be worn in workshop.						
	5.4	Describe how to deal with cuts, grazes, and wound.						

## **Unit 2: COMMUNICATION IN GSM AND MOBILE PHONES**

**Unit Reference Number: ICT/GRM/002/L2**

**QCF Level: 2**

**Credit Value: 2**

**Guided Learning Hours: 20**

**Unit Purpose:** *This Unit is aimed at equipping the learner with the relevant GSM and mobile phone communication terms and terminologies, and to enable him effectively communicate in his 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/or 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. Witness Testimony (WT)
4. Assignment (ASS)

## UNIT 02: COMMUNICATION IN GSM AND MOBILE PHONES

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. No.	Page No.
The learner will:		The learner can:						
<b>LO 1:</b> Apply relevant technical terms and terminologies.	1.1	Explain the appropriate technical terms used in GSM and mobile phone.						
	1.2	Classify A-Z GSM and mobile phone terms giving their definition.						
	1.3	Describe the process involved when using GSM and mobile phone terminologies. (E.g. SMS, MMS, etc.)						
<b>LO 2:</b> Apply the appropriate mobile phone acronyms used by mobile phone technicians.	2.1	Identify the correct meaning for the GSM and mobile phone acronyms (e.g. mic, bb. etc.).						
	2.2	Interpret GSM and mobile phone number prefixes (e.g. 01, 062, 064, 0803, 0802, 0907etc.)						
	2.3	Mention GSM and mobile phone acronyms.						
<b>LO 3:</b> Use GSM and mobile phone application software.eg timing, navigation, sensor log etc.	3.1	Select the appropriate application software to be used in GSM and mobile phone.						
	3.2	Describe how to run application software in a GSM and mobile phone.						
	3.3	State the disadvantage of using a wrong application software in a GSM and mobile phone.						
<b>LO 4:</b> Outline advantages of GSM and mobile phone over analogue system.	4.1	Identify the economic importance of GSM and mobile phone over analogue.						
	4.2	State the social medias used in GSM and mobile communication.						
	4.3	Explain the steps observed in using any of the social media on a GSM and mobile phone.						
	4.4	State the disadvantages of GSM and mobile phone.						
	4.5	Explain the security mechanism used in GSM and mobile phone.						

## **Unit 3: REPAIR HARDWARE FAULTS IN GSM AND MOBILE PHONES**

**Unit Reference Number: ICT/GRM/003/L2**

**QCF Level: 2**

**Credit Value: 6**

**Guided Learning Hours: 60**

**Unit Purpose:** *This Unit is aimed at acquainting the learner with the basic GSM and mobile phone hardware faults, knowledge of the tools/equipment required to effect the repairs, and how to clone phones.*

### **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/or 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. Witness Testimony (WT)
4. Assignment (ASS)



### UNIT 03: REPAIR HARDWARE FAULTS IN GSM AND MOBILE PHONES

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.				
The learner will:		The learner can:									
<b>LO 1:</b> Demonstrate knowledge of hardware faults and tools used in GSM and mobile phone repairs.	1.1	Identify common hardware faults on GSM and mobile phones.									
	1.2	Differentiate between hardware and software faults in GSM and mobile phones.									
	1.3	Identify common hardware tools used in GSM and mobile phone repairs.									
	1.4	Diagnose faults in GSM and mobile phones									
	1.5	Repair faults in GSM and mobile phones									
	1.6	State the advantages of using the appropriate tools during GSM and mobile phone repairs.									
<b>LO 2:</b> Diagnose faults in GSM and mobile phone hardware components.	2.1	Identify common hardware faults in GSM and mobile phones.									
	2.2	Determine the components required for GSM and mobile phone hardware fault diagnosis.									
	2.3	Replace faulty GSM and mobile phone hardware components.									
<b>LO 3:</b> Carry our Repairs of GSM and mobile phones.	3.1	Carry out trouble shooting, tapping and testing in GSM and mobile phone repairs.									
	3.2	Identify the processes involved when tracing and tapping on GSM and mobile phone mother board.									
	3.3	Explain the techniques in tracing /tapping of GSM mobile phones.									
	3.4	Identify appropriate tools to be used when tracing, tapping and testing of GSM and mobile phones.									
	3.5	Identify general precautions while dismantling GSM and mobile phones.									
	3.6	State the precaution for coupling a GSM and mobile phone.									
	3.7	Explain the steps in servicing a mobile phone.									
	3.8	Carryout the servicing of GSM and mobile phones using appropriate tools/ equipment.									
<b>LO 4:</b> Use appropriate GSM and mobile phone accessories.	4.1	Identify classes of GSM and mobile phone accessories.									
	4.2	Explain functions of GSM and mobile phone accessories.									
	4.3	Perform correct use of GSM and mobile phone accessories.									
<b>LO 5:</b> Demonstrate knowledge of	5.1	State the significance of GSM and mobile phone accessories.									
	5.2	Identify social importance of GSM and mobile phone accessories, e.g. selfie stick.									

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
importance of accessories of GSM and mobile phones.	5.3	State the implications of unavailability of GSM accessories								
<b>LO 6:</b>	6.1	Perform pairing of accessories to a GSM and mobile phones.								
Demonstrate knowledge of accessory connectivity	6.2	Explain GSM and mobile phone accessories using the following: a. battery b. charger c. screen touch								
	6.3	Explain the economic implications of GSM and mobile phone accessories.								
<b>LO 7:</b>	7.1	Enumerate the advantages of cloning a mobile phone.								
Clone GSM and mobile phones.	7.2	Carryout cloning of a GSM and mobile phone.								
	7.3	Differentiate between cloned phones and fairly used phones.								

## **Unit 4: INSTALL GSM AND MOBILE PHONES SOFTWARE**

**Unit Reference Number: ICT/GRM/004/L2**

**QCF Level: 2**

**Credit Value: 6**

**Guided Learning Hours: 60**

**Unit Purpose:** *This Unit is aimed at providing the learner with the relevant knowledge of various application software, the ability to install and uninstall application software, and how to resolve software and security issues in GSM and mobile phones.*

### **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/or 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. Witness Testimony (WT)
4. Assignment (ASS)

## UNIT 04: INSTALL GSM AND MOBILE PHONES SOFTWARE

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. No.	Page No.
The learner will:		The learner can:						
<b>LO 1:</b> Demonstrate knowledge of GSM and mobile phone operating system software specifications	1.1	Identify various GSM and mobile phone operating systems.						
	1.2	Explain GSM and mobile phone software terms for various operating systems.						
	1.3	Explain how to install GSM and mobile phone software.						
	1.4	State the economic importance of GSM and mobile phone operating system software.						
	1.5	Identify social importance of GSM and Mobile phone operating system software.						
	1.6	Identify security issues on GSM and mobile phone operating system software.						
<b>LO 2:</b> Update and upgrade GSM and mobile phone application software.	2.1	Identify the various application software used in GSM and mobile phones.						
	2.2	Update application software in GSM and mobile phones.						
	2.3	Upgrade application software in GSM and mobile phones.						
<b>LO 3:</b> Run application software in GSM and mobile phone.	3.1	Select the appropriate application to be used in GSM and mobile phone.						
	3.2	Describe how to run an application in GSM and mobile phones.						
	3.3	State the disadvantage of not using appropriate application software in GSM and mobile phones.						
	3.4	Run an application software on GSM and mobile phones.						
<b>LO 4:</b> Format/wipe GSM and mobile phone memory.	4.1	Identify steps of formatting/wiping GSM and mobile phone memory.						
	4.2	Identify the importance of formatting/wiping GSM and mobile phone memory.						
	4.3	Explain the implications of sudden formatting/wiping GSM and mobile phone memory.						
	4.4	Carryout the formatting of GSM and mobile phones.						
<b>LO 5:</b> Configure GSM and mobile phones.	5.1	Identify the procedures of configuring GSM and mobile phone: <ul style="list-style-type: none"> <li>• APN,</li> <li>• WAP etc.</li> </ul>						
	5.2	Identify the requirements for configuring GSM and mobile phones.						
	5.3	Explain the importance of configuration of GSM and mobile phone.						

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
	5.4	Use test point in flashing GSM and mobile phones.								
	5.5	Demonstrate the use of test mode while flashing.								
	5.6	Illustrate the use of firmware during flashing.								
<b>LO 6:</b> Use flashing boxes in GSM and mobile phone software.	6.1	Identify various types of flashing boxes used in rectifying GSM and mobile phone faults.								
	6.2	Explain the implications of using a wrong flashing box on GSM and mobile phones.								
	6.3	Use a flashing box to flash GSM mobile phones.								
<b>LO 7:</b> Use USB cables in flashing GSM and mobile phones.	7.1	Identify types of USB cables for GSM and Mobile phones.								
	7.2	Explain the functions of USB cables for flashing of GSM and Mobile phones.								
	7.3	Use USB cables to flash GSM and Mobile phones.								
<b>LO 8:</b> Demonstrate knowledge of dongle/wi-fi/modem/ Accessories in GSM and mobile phone software.	8.1	Explain the following: a) dongle  b) wi-fi  c) modem								
	8.2	Explain the differences among all the items listed above.								
	8.3	Explain various software accessories and their uses.								
<b>LO 9:</b> Resolve problems of tripping off / rebooting in GSM and mobile phones.	9.1	Explain causes of tripping off in GSM and mobile phones.								
	9.2	Perform rebooting of GSM and mobile phone.								
	9.3	Diagnose and rectify the fault of tripping and rebooting of GSM and mobile phones.								
<b>LO 10:</b> Resolve problems of blinking/ hanging in GSM and mobile phones.	10.1	Explain causes of blinking in GSM and mobile phones.								
	10.2	Explain causes of hanging in GSM and mobile phones.								
	10.3	Diagnose and rectify the fault of blinking and hanging of GSM and mobile phones.								
<b>LO 11:</b> Resolve start-up problem/ power	11.1	Explain causes of start-up problem in GSM and mobile phones.								
	11.2	Explain causes of power problem in GSM and mobile phones.								

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
problem in GSM and mobile phones.	11.3	Diagnose and rectify start up and power problems in GSM and mobile phones.								
<b>LO 12:</b> Demonstrate knowledge of coding/decoding in GSM and mobile phone	12.1	Explain code and decoding used in GSM and mobile phones.								
	12.2	Classify various types of codes used in GSM and mobile phones.								
	12.3	Identify various functions of codes used in GSM and mobile phones, eg. *#06#, *#0000#, *2767*2878#, etc.								
	12.4	Carryout decoding of GSM mobile phones with a forgotten code.								
<b>LO 13:</b> Draw security patterns to secure GSM and mobile phones.	13.1	Discuss security patterns used in GSM and mobile phones.								
	13.2	Explain the benefits of security patterns to GSM and mobile phone users.								
	13.3	Explain the implications of mobile phone patterns.								
	13.4	Use different patterns to secure GSM and mobile phones.								
<b>LO 14:</b> demonstrate knowledge of network turbo SIM.	14.1	Identify various GSM and mobile phone network providers in Nigeria.								
	14.2	Identify various categories of turbo SIM in GSM and mobile phones.								
	14.3	Use a turbo SIM on GSM and mobile phone.								

## **Unit 5: ESTABLISH GSM AND MOBILE PHONE SPARE PARTS BUSINESS**

**Unit Reference Number: ICT/GRM/005/L2**

**QCF Level: 2**

**Credit Value: 3**

**Guided Learning Hours: 30**

**Unit Purpose:** *This Unit is aimed at equipping the learner with the basic knowledge required to set up a GSM and mobile phone spare parts business.*

### **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/or 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. Witness Testimony (WT)
4. Assignment (ASS)

## UNIT 05: ESTABLISH GSM AND MOBILE PHONE SPARE PARTS BUSINESS

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
<b>LO 1:</b> Demonstrate knowledge on locations of GSM and mobile phone spare parts manufacturers.	1.1	Identify sources of GSM and Mobile phone spare part.								
	1.2	Identify GSM and mobile phone spare parts manufacturer.								
	1.3	Identify quality GSM and mobile phone spare part manufacturers.								
<b>LO 2:</b> Demonstrate knowledge of GSM and mobile phone scraps	2.1	Identify various GSM and mobile phone scraps.								
	2.2	Explain the importance of GSM and mobile phone scraps to technician/customer.								
	2.3	Explain the advantages of GSM and mobile phone scraps to technician/customer.								
<b>LO 3:</b> Replace new or fairly used GSM and mobile phone spare parts.	3.1	Explain GSM and mobile phone spare part.								
	3.2	Fix a faulty GSM and mobile phone using spare parts. E.g. LCD (touch screen), flex, etc.								
	3.3	Match the correct GSM and mobile phone to spare parts.								



## **Unit 6: ESTABLISH GSM AND MOBILE PHONES WORKSHOP BUSINESS**

**Unit Reference Number: ICT/GRM/001/L2**

**QCF Level: 2**

**Credit Value: 3**

**Guided Learning Hours: 30**

**Unit Purpose:** *This Unit is aimed at equipping the learner with the basic knowledge required to set up a GSM and mobile phone workshop business.*

### **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/or 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. Witness Testimony (WT)
4. Assignment (ASS)

## UNIT 06: ESTABLISH GSM AND MOBILE PHONES WORKSHOP BUSINESS

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. No.	Page No.
The learner will:		The learner can:						
<b>LO 1:</b> Demonstrate knowledge in GSM and mobile phone workshop business.	1.1	Identify types of GSM and mobile phone business.						
	1.2	Explain various features that make up a GSM and mobile phone business.						
	1.3	State the importance of GSM and mobile phone business.						
	1.4	State the features of a GSM and mobile phone business.						
	1.5	State the functions of a GSM and mobile phone business.						
<b>LO 2:</b> Carryout the implementation of a GSM and mobile phone business project	2.1	Identify a GSM and mobile phone business in demand.						
	2.2	Prepare a business plan for GSM and mobile phone business.						
	2.3	Implement a GSM and mobile phone business project.						
	2.4	Evaluate a GSM and mobile phone business project.						
	2.5	Explain how to source for fund for a mobile phone business.						
	2.6	Identify the appropriate prerequisite knowledge for mobile phone sales.						
<b>LO 3:</b> Carry out the installation of GSM and mobile phone software.	3.1	Explain categories of GSM and mobile phone software specifications, eg. <ul style="list-style-type: none"> <li>• Android</li> <li>• Windows</li> <li>• Macintosh</li> <li>• Java</li> <li>• Simbian</li> </ul>						
	3.2	Define GSM and mobile phone software terms and acronyms.						
	3.3	Carryout installation of software in GSM and mobile phones.						
<b>LO 4:</b> Apply knowledge of social media on GSM and mobile phone.	4.1	Explain economic importance of GSM and mobile phone software.						
	4.2	Explain social importance of GSM and Mobile phone software.						
	4.3	Explain the security issues of GSM and mobile phone software.						