



NATIONAL SKILLS QUALIFICATION

LEVEL 5

TITLE:

Cybersecurity Engineer

YEAR: 2024

NATIONAL SKILLS QUALIFICATION

NSQ LEVEL 5 Cybersecurity Engineer

General Information

Qualification Purpose

This qualification is designed to develop professionals who possess the skills, knowledge, and capabilities to secure enterprise-level systems, networks, and data.

Qualification Objectives

The learner should be able to:

- i. Comply with organizational policies, standards, and frameworks.
- ii. Analyze risks and vulnerabilities in network, system, and application infrastructures.
- iii. Implement robust cybersecurity strategies.
- iv. Evaluate emerging cybersecurity threats and technologies.
- v. Supervise incident responses, recovery, and forensic investigations.

Mandatory Units

Unit No	Ref. Number	NOS Title	Credit Value	Learning Hours	Remark
Unit 01	IS/CCE/01/L5	Occupational Health and Safety	2	20	Mandatory
Unit 02	IS/CCE/02/L5	Communication in the Work Environment	2	20	Mandatory
Unit 03	IS/CCE/03/L5	Teamwork	2	20	Mandatory
Unit 04	IS/CCE/04/L5	Cybersecurity Governance	6	60	Mandatory
Unit 05	IS/CCE/05/L5	Network Security Management	6	60	Mandatory
Unit 06	IS/CCE/06/L5	Information Security Management	6	60	Mandatory
Unit 07	IS/CCE/07/L5	Threat Intelligence and Monitoring	6	60	Mandatory
Unit 08	IS/CCE/08/L5	Incident Management and Forensic Investigation	6	60	Mandatory
			36	360	

**National Skills Qualification
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Unit 01: Health, Safety and Environment

Unit Reference Number: IS/CCE/01/L5

NSQ Level: 5

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

This unit covers the safe working practices and procedures to be observed when working in an ICT environment and the statutory requirement, risk assessment procedures and relevant requirements.

Unit Assessment Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment Methods:

- Observation
- Professional Discussion
- Question and Answer
- Assignment (ASS), etc.

Unit 01: Health, Safety and Environment

Learning Objective (LO)	Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Understand safety precautions in workplace	1.1 Dress properly to the work environment.								
	1.2 Always Work safely, complying with health and safety and other relevant regulations and guidelines.								
	1.3 Get any cuts, grazes and wounds treated by the appropriate and qualified person.								
	1.4 Report illness and infection promptly to the appropriate persons.								
LO2 Know how to maintain personal health and hygiene	2.1 Summarise own responsibility under the Health and Safety Act as it relates to own occupation								
	2.2 State general rules on hygiene that must be followed.								
	2.3 Explain the importance of maintaining good personal hygiene.								
	2.4 Describe how to deal with cuts, grazes and wounds and why it is important to do so								
LO3 Be able to help maintain a hygienic, safe and secure workplace.	3.1 State the importance of working in a healthy, safe and hygienic workplace.								
	3.2 Promote health, hygiene and safety procedures during work.								
	3.3 Practice emergency procedures during work.								
	3.4 Ensure that organizational security procedures are followed.								
	3.5 Ensure the disposal of waste and pollution control with organic and inorganic waste disposal methods.								
LO4 Prevent hazards and maintain safe and secure workplace	4.1 Supervise identification of any hazards or potential hazards and deal with these correctly.								
	4.2 State where information about health and safety in your workplace can be obtained.								
	4.3 Describe the type of hazards in the workplace that may occur and how to deal with them.								
	4.4 Identify hazards that can be dealt with personally and those that should be reported to appropriate personnel.								
	4.5 Follow organization procedures on how to warn other people about hazards and why this is important								
	4.6 State why accidents and near accidents should be reported to the								

Learning Objective (LO)	Performance Criteria (PC)	Evidence Type	Ref. Page No
	appropriate personnel.		
	4.7 Describe the type of emergencies that may happen in the workplace and how to deal with them.		
	4.8 State where to find the first-aid equipment and locate the authorized personnel.		
	4.9 Lift and handle materials in line with work environment procedure.		
	4.10 State other ways of working safely that are relevant to own position responsibility and its importance.		
	4.11 Describe organizational emergencies procedures, in particular fire, and how these should be followed.		
	4.12 State the possible causes for fire in the workplace.		
	4.13 Describe how to minimize the possibility of fire in the workplace.		
	4.14 State where to find the alarms and how to set them up.		
	4.15 State why a fire should never be approached unless it is safe to.		
	4.17 Describe organizational security procedures and why these are important		
	4.18 State the importance of reporting all usual or non-routine incidents to the appropriate personnel.		
Learner's Signature		Date	
Assessor's Signature		Date	
IQA's Signature		Date	
EQA's Signature		Date	

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Unit 02: Communication and Interpersonal Skill

Unit Reference Number: IS/CCE/02/L5

NSQ Level: 5

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

This unit seeks to develop the competency of the learner to be able to express oneself fluently in a well-defined manner understandable to the client with problems to solve and with group of colleagues.

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Reflective Journal (RJ)
5. Assignment (ASS)

Unit 02: Communication and Interpersonal Skill

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Communicate with Client	1.1	Notify client about new systems features to keep them up to date.								
	1.2	Notify client about new systems features to keep them up to date.								
	1.3	Communicate with the client about any changes on the website/application								
	1.4	Confirm that no request from client is pending.								
	1.5	Communicate to the team about the market trends to ensure that they are kept up to date.								
LO2 Communicate with Peer/Team Members	2.1	Check that all team members/peers are in line with the requirements								
	2.2	Give clear directions to team members/peers to follow								
	2.3	Check that a proper mechanism is in place to motivate all team members								
	2.4	Provide a suitable and comfortable work environment for peers and team members								
	2.5	Give report of team members activities								
LO3 Communicate with Managers	3.1	Provide a standard operating procedure for communication with the seniors.								
	3.2	Follow all instructions given by seniors in each job role.								
	3.3	Execute all instructions coming from the seniors using proper mechanism								
	3.4	Communicate all the emergencies and bugs/updates to the relevant Managers								
Learner's Signature						Date				
Assessor's Signature						Date				
IQA's Signature						Date				
EQA's Signature						Date				

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Unit 03: Teamwork

Unit Reference Number: IS/CCE/03/L5

NSQ Level: 5

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

The purpose for this unit is to impact into the learner the necessary skills, knowledge and understanding required to develop team spirit and positive working relationship with colleagues.

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Reflective Journal (RJ)
5. Assignment (ASS)

Unit 03: Teamwork

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Positive working relationship with colleagues	1.1	Identify the need for developing positive working relationship with colleagues								
	1.2	Recognize the importance of relating with other people in a way that makes them feel valued and respected								
	1.3	Assist team members when required.								
	1.4	Report to the personnel when request for assistance fall outside area of responsibility								
	1.5	Communicate information to colleagues about own work that might affect others								
LO2 Take responsibility within the team	2.1	Recognize own role and responsibilities within team								
	2.2	Perform individual tasks in line with the team rules and regulations.								
	2.3	Participate effectively in teamwork								
LO3 Compliance with policy of organisation	3.1	Work in line with organizational standard								
	3.2	Use organizational code of practice								
	3.3	Explain organizational code of conduct								
Learner's Signature						Date				
Assessor's Signature						Date				
IQA's Signature						Date				
EQA's Signature						Date				

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Unit 04: Cybersecurity Governance

Unit Reference Number: IS/CCE/04/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Unit Purpose:

This unit aims to equip learner with knowledge, skills and capabilities to comply with standards and create security policies, while adhering to legal and industry cybersecurity mandates.

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

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

Unit 04: Cybersecurity Governance

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Demonstrate understanding of security compliance frameworks	1.1	Demonstrate understanding of cybersecurity frameworks like NIST 2.0, PCI DSS v4.0, CIS, CMMC, etc.								
	1.2	Analyse the role of cybersecurity governance within an organization.								
	1.3	Assess risk management policies and procedures.								
	1.4	Describe the impact of cybersecurity laws and regulations on business operations.								
	1.5	Advise stakeholders on implementing governance structures for security compliance.								
LO2 Develop policies and strategies for security governance	2.1	Create security policies that align with organizational objectives.								
	2.2	Evaluate the effectiveness of current security frameworks.								
	2.3	Implement security training programs to promote policy compliance and awareness								
	2.4	Support the creation of incident response plans in compliance with security governance.								
	2.5	Inspect policy effectiveness through internal audits.								
LO3 Evaluate cybersecurity risk management frameworks	3.1	Identify and Analyse potential risks related to cybersecurity threats.								
	3.2	Assess the likelihood and impact of security risks.								
	3.3	Develop risk mitigation strategies for identified threats.								
	3.4	Explain risk management tools and models.								
	3.5	Apply appropriate risk management model.								
	3.6	Evaluate the organization's risk tolerance and security posture.								
LO4 Plan and develop compliance monitoring mechanisms	4.1	Select appropriate tools to monitor cybersecurity compliance.								
	4.2	Create processes to audit and assess cybersecurity measures.								
	4.3	Demonstrat your understanding ongoing monitoring and adjustments to risk management procedures.								
	4.4	Compare different approaches to								

Learning Objective (LO)	Performance Criteria (PC)	Evidence Type	Ref. Page No
	compliance monitoring.		
	4.5 Analyse monitoring results and propose improvements.		
Learner's Signature		Date	
Assessor's Signature		Date	
IQA's Signature		Date	
EQA's Signature		Date	

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Unit 05: Network Security Management

Unit Reference Number: IS/CCE/05/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Unit Purpose:

Learners will master the knowledge and skills to design, implement, and maintain secure network infrastructures.

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

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

Unit 05: Network Security Management

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Implement secure network architectures	1.1	Access the integrity of network security protocols and firewalls.								
	1.2	Analyse network vulnerabilities and threat vectors.								
	1.3	Create a secure network architecture based on organizational requirements.								
	1.4	Inspect network traffic for suspicious activities and potential breaches.								
	1.5	Reviwe network configuration to enhance security measures.								
LO2 Evaluate the effectiveness of network security controls	2.1	Access network security breaches and suggest corrective actions.								
	2.2	Compare intrusion detection and prevention systems (IDPS).								
	2.3	Assess firewall and router configurations for gaps in security.								
	2.4	Analyse network segmentation to minimize threat impact.								
	2.5	Observe and interpret the performance of network security controls.								
LO3 Implement secure access management	3.1	Develop secure authentication and authorization mechanisms.								
	3.2	Explain how to adherence to least privilege access principles.								
	3.3	Investigate access control issues and take appropriate actions.								
	3.4	Implement multi-factor authentication (MFA) across network systems.								
	3.5	Support user awareness programs on secure access management.								
LO4 Operate and maintain network security infrastructure	4.1	Implement routine maintenance of network security tools.								
	4.2	Implement automated mechanisms for continuous monitoring of network health.								
	4.3	Manage the operation of VPNs, IDS, IPS, and firewalls.								
	4.4	Supervise network administrators to ensure compliance with security protocols.								
	4.5	Plan for the upgrade and renewal of network security systems.								
Learner's Signature			Date							

Learning Objective (LO)	Performance Criteria (PC)	Evidence Type	Ref. Page No
Assessor's Signature		Date	
IQA's Signature		Date	
EQA's Signature		Date	

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Unit 06: Information Security Management

Unit Reference Number: IS/CCE/06/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Unit Purpose:

Learners will acquire the skills to assess information security risks, design data protection systems, and respond to data breaches to maintain data integrity and confidentiality

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

5. Direct Observation (DO)
6. Question and Answer (QA)
7. Witness Testimony (WT)
8. Assignment (ASS)

Unit 06: Information Security Management

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Assess information security risks	1.1	Analyse organizational data to identify potential risks.								
	1.2	Evaluate the impact of data breaches on operations, financial impacts reputation, etc								
	1.3	Describe the process of data classification and prioritization.								
	1.4	Support the organization in complying with applicable data protection laws.								
	1.5	Develop risk mitigation strategies for data protection.								
LO2 Implement data protection measures	2.1	,Investigate data protection systems for weaknesses								
	2.2	Ensure the encryption of critical data assets.								
	2.3	Semulate policies to protect sensitive information.								
	2.4	Implement robust access control for sensitive data.								
	2.5	Plan incident response processes for data breaches.								
LO3 Operate data protection systems	3.1	Participate in data protection measures such as the maintenance, encryption of systems and backups.								
	3.2	Analyse the performance of data protection measures.								
	3.3	Compare different encryption algorithms and their effectiveness.								
	3.4	Implement measures to prevent data loss.(Policies and DLP etc)								
	3.5	Interpret reports from data protection monitoring systems.								
LO4 Ensure compliance with data protection regulations	4.1	Ensure alignment with GDPR, HIPAA, NDPA or any other local data laws.								
	4.2	Develop internal data protection audits and inspections approches								
	4.3	Evaluate the organization's compliance posture.								
	4.4	Implement necessary measures to address compliance gaps.								
	4.5	Advise stakeholders on the implications of data protection regulations.								
Learner's Signature			Date							
Assessor's Signature			Date							

Learning Objective (LO)	Performance Criteria (PC)	Evidence Type	Ref. Page No
IQA's Signature		Date	
EQA's Signature		Date	

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Unit 07: Threat Intelligence and Monitoring

Unit Reference Number: IS/CCE/07/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Unit Purpose:

The learner will gain an understanding of how to detect, monitor, and respond to emerging cybersecurity threats.

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

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

Unit 07: Threat Intelligence and Monitoring

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type				Ref. Page No			
LO1 Analyse emerging cybersecurity threats	1.1	Investigate new attack vectors and threat actors.								
	1.2	Compare emerging cybersecurity technologies.								
	1.3	Evaluate the potential impact of new threats on the organization.								
	1.4	Create threat models to understand potential vulnerabilities.								
	1.5	Support continuous threat monitoring efforts.								
LO2 Implement threat detection systems	2.1	Plan the integration of threat intelligence platforms (TIPs).								
	2.2	Implement automated threat detection mechanisms.								
	2.3	Compare and select intrusion detection systems.								
	2.4	Operate threat intelligence feeds for real-time monitoring.								
	2.5	Evaluate the effectiveness of implemented detection systems.								
LO3 Response to cyber incidents	3.1	Ensure proper incident response procedures are followed.								
	3.2	Analyse cyber incident reports for root causes.								
	3.3	Investigate compromised systems and contain threats.								
	3.4	Develop forensic investigation reports.								
	3.5	Support recovery efforts after incidents.								
LO4 Supervise proactive threat hunting	4.1	Plan proactive threat-hunting activities.								
	4.2	Investigate malicious activity (systems for hidden).								
	4.3	Create strategies for continuous threat-hunting improvements.								
	4.4	Supervise junior security analysts during threat-hunting missions.								
	4.5	Evaluate and interpret the results of threat-hunting exercises.								
Learner's Signature			Date							
Assessor's Signature			Date							
IQA's Signature			Date							
EQA's Signature			Date							

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Unit 08: Incident Management and Forensic Investigation

Unit Reference Number: IS/CCE/08/L5

NSQ Level: 5

Credit Value: 6

Guided Learning Hours: 60

Unit Purpose:

The learner will gain an understanding of incident management and digital forensics and acquire the skills to plan, develop, and execute incident response strategies,

Unit Assessment Requirements/Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Assessment methods to be used include:

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

Unit 08: Incident Management and Forensic Investigation

Learning Objective (LO)		Performance Criteria (PC)	Evidence Type						Ref. Page No
LO1 Develop incident response procedures	1.1	Create incident response protocols and escalation paths.							
	1.2	Ensure incident response plans comply with regulatory requirements.							
	1.3	Develop communication plans for stakeholders during incidents.							
	1.4	Select appropriate tools for incident management.							
	1.5	Initiate drills to test incident response readiness.							
LO2 Investigate security incidents and breaches	2.1	Examine logs and digital evidence for signs of compromise.							
	2.2	Develop root cause analysis reports.							
	2.3	Support collaboration with external cybersecurity teams during incidents.							
	2.4	Obtained forensic evidence that complies with legal requirements.							
	2.5	Investigate the scope of data loss during breaches							
LO3 Supervise post-incident recovery efforts	3.1	Evaluate the organization's readiness for post-incident recovery.							
	3.2	Create plans for restoring affected systems and services.							
	3.3	Ensure continuity and disaster recovery procedures are in place.							
	3.4	Supervise the implementation of lessons learned from incidents.							
	3.5	Support the update of incident response plans post-recovery.							
LO4 Evaluate incident management processes	4.1	Interpret post-incident reports to identify process improvements.							
	4.2	Compare different incident management frameworks.							
	4.3	Ensure alignment between incident management and organizational strategy.							
	4.4	Assess the effectiveness of current incident management procedures.							
	4.5	Provided recommendations for improving incident response capabilities.							
Learner's Signature			Date						
Assessor's Signature			Date						
IQA's Signature			Date						

Learning Objective (LO)	Performance Criteria (PC)	Evidence Type	Ref. Page No
EQA's Signature	Date		

CIRITIQUE TEAM LIST

SN	NAME	ADDRESS	EMAIL AND PHONE
1	Ikechukwu Jacob Umesi	Mo Solicitors 4 Trinity Close Olodi Apapa, Lagos	iykejacob@gmail.com 08055900895
2	Frank Iheonu	Inits Limited 283 Herbert Macaulay Way, Yaba	iheonufrank@gmail.com 07036999294
3	Chibueze Princewill Okereke	Zenith Bank Group (Zenpay) 5 Roluga Street, Soluyi, Gbagada, Lagos	okerekeprincewill@hotmail.com 07025768487
4	Emmanuel C. Amadi	Federal University of Technology, Owerri	emmanuel.amadi@futo.edu.ng 08062142392
5	Engr. Lawal Abdullahi	Zenith Kad Ict Hub Kaduna	ocplawal@gmail.com 08035169089
6	Muhammad Musa	NBTE	muhammadwaziri@msn.com 08033671027
7	MUHAMMAD, BILYAMINU MUSA	NBTE	mahogany@gmail.com 09036071291
8	Muhammad Bello Aliyu	CPN	mbacaspets@gmail.com 08039176984
9	BENJAMIN, Prince Chukwudindu	CPN	pco.benjamin@gmail.com 08132850544
10	Amoo, Taofeek	CPN	taofeekamoo@gmail.com 08053370334
11	Olatunji Abibat	CPN	adehabb@gmail.com 08054263602
12	Linda Ngbeken	CPN	excel4all2000@yahoo.com 08128219274

VALIDATION TEAM LIST

SN	NAME	ADDRESS	EMAIL AND PHONE
1	Dr. Musa Hatim Koko	NBTE	08039606948
2	Aliyu Imafidor Hassan	NBTE	08065089233
3	Oje Emmanuel	MINC	07031350900
4	Oluwafunmi Grace Akinda	Galaxy Backbone	08182904573
5	Fatai Akinsola	Galaxy Backbone	08023220648
6	Emmanuel O. Okoi	NDC	07036740799
7	Remigius C. Okoro	NCC	
8	Kayode A. Oni	ONSA	08034339128
9	Pozing Zingman	NIMC	07034612244
10	Abbas Lawal	NGCERT	08037007718
11	Rani Mohammed	ONSA	08068076158
	MUHAMMAD, BILYAMINU MUSA	NBTE	mahogany@gmail.com 09036071291
	Muhammad Bello Aliyu	CPN	mbacaspets@gmail.com 08039176984
	BENJAMIN, Prince Chukwudindu	CPN	pco.benjamin@gmail.com 08132850544