REPUBLIC OF KENYA

COMPETENCY-BASED MODULAR CURRICULUM

FOR

INFORMATION AND COMMUNICATION TECHNOLOGY OPERATION

KNQF LEVEL 4

PROGRAMME ISCED CODE: 061 2354A

COMPUTER NETWORK SETUP

UNIT CODE: 0612 351 03A

Relationship to Occupational Standards

This unit addresses the unit of competency: Setup Computer Network

Duration of unit: 200 Hours

Unit Description:

This unit of learning covers the learning outcomes, content, assessment methods, methods of delivery and resources required to setup computer network. It involves terminating network cables, connecting network cables and performing computer network Maintenance.

Summary of Learning Outcomes

S/No	Learning Outcomes	Duration (Hours)
1.	Terminate Computer network cables	70
2.	Connect Computer network cables	70
3.	Perform Computer network Maintenance	60
	Total	**200**

Learning outcomes, Content and Suggested Assessment Methods

Learning outcome	Content	Suggested Assessment Methods
1. Terminate Computer network cables	1.1 Selecting Network devices 1.1.1 Introduction to computer networks 1.1.2 Types of network topologies 1.1.3 Types of network devices 1.1.4 Components of a computer networks 1.1.5 Types of network tools	• Practical • Oral questions • Written tests • Observation • Portfolio of evidence

	1.1.6 Cable colour coding 1.2 Network cable trunking 1.2.1 Definition cable trunking 1.2.2 Types of cable trunking 1.2.3 Tools used in cabling trunking 1.2.3.1 Measuring tape 1.2.3.2 Pencil 1.2.3.3 Cable ties 1.2.3.4 Wire cutters 1.2.3.5 Safety equipment 1.2.3.6 Spirit level 1.2.3.7 Drill 1.2.3.8 Screwdriver 1.3 Network cable termination 1.3.1 Definition of networking cable termination 1.3.2 Tools for cable termination 1.3.2.1 RJ45 connectors 1.3.2.2 Crimping tool 1.3.2.3 Wire stripper 1.3.2.4 Cable cutter 1.3.2 Process of cable termination 1.3.2.1 Cable stripping 1.3.2.2 Colour coding 1.3.2.3 Cable crimping	
2. Connect Computer network cables	2.1 Observing safety measures in networking 2.1.1 Computer network safety measures 2.1.1.1 Overall/apron/dust coat 2.1.1.2 Gloves 2.1.1.3 Safety boots 2.1.1.4 Ergonomics	• Practical • Oral questions • Written tests • Observation • Portfolio of evidence

	2.1.1.5 First AID kit 2.2 Setup network devices 2.4.1 Router 2.4.2 Switch 2.4.3 Bridge 2.4.4 Hub 2.4.5 Patch panels 2.4.6 Access point 2.3 Network cable testing 2.3.1 Cable testing methods 2.3.2 Continuity Testing 2.3.3 Wire Mapping 2.3.4 Cable Length Testing 2.3.5 Fault Detection 2.3.6 Cable testing tools 2.3.6.1 Cable tester 2.3.6.2 Multimeter 2.3.6.3 Crimping tool 2.3.6.4 Wire Stripper and cutter 2.4 Network cable connection 2.4.1 Networking standards 2.4.1.1 HTTP 2.4.1.2 IEEE 802.1 2.4.1.3 TCP/IP 2.5 Network connection establishment 2.6 Network testing	
3. Perform Computer Network Maintenance	3.1 Monitoring computer network 3.1.1 Introduction to computer network monitoring and maintenance 3.1.2 Computer network monitoring physical tools 3.1.2.1 Cable testers	• Practical • Oral questions • Written tests • Observation • Portfolio of evidence

	3.1.2.2 Crimping tool 3.1.2.3 Stripping tool 3.1.3 Physical networking device status monitoring 3.1.3.1 Port and interface 3.1.3.2 Cable and connection 3.1.3.3 Power supply 3.1.3.4 Network optimization 3.2 Troubleshooting Computer network 3.3 Optimizing Computer network 3.3.1 Upgrading network hardware devices 3.3.2 Upgrading computer network cables	

Suggested methods of Instruction

- In Instructor led facilitation of theory
- Demonstration by trainer
- Practical work by trainee
- Viewing of related videos
- Group discussions
- Simulation

Recommended resources for 25 trainees

S/No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Trainee: Item)
A	Learning Materials			
1.	Textbooks	For trainee's use	13 pcs	13:1
2.	Installation manuals	For trainee's use	5pcs	5:1
3.	Charts	For training		
4.	PowerPoint presentations	For trainer's use		
B	Learning Facilities & infrastructure			
5.	Lecture/theory room	For trainee's use	1	25:1
6.	Computer Laboratory	For trainee's use	1	25:1
7.	Internet Connection	For trainee's use		
C	**Consumable materials**			
8.	Printing papers	For printing	1 ream	1:20
9.	Toners	For printing	2 pcs	13:1
10.	Assorted colour of whiteboard markers	For writing	1	25:1
D	**Tools and Equipment**			
1.	Computers	For training	25 pcs	1:1
2.	Projector	For training	1 pc	25:1
3.	Signal testers	For training	5 pcs	5:1
4.	Header checker	For training	25 pcs	1:1
5.	Crimping tools	For training	25 pcs	1:1

6.	Cable tester	For training	5 pcs	5:1
7.	Switches	For training	5pcs	5:1
8.	Repeaters	For training	5pcs	5:1
9.	Routers/modem	For training	5pcs	5:1
10.	Network tool kit	For training	25 pcs	1:1
11.	RJ45	For training	300 pcs	1:10
12.	UTP Ethernet Cable	For training	300 metres	1:10
13.	Antistatic gloves	For training	25 pairs	1:1