

PERFORM COMPUTER NETWORKING

ISCED UNIT CODE: 0612554 03A

TVET CDACC UNIT CODE: SEC/CU/CS/CR/03/5/MA

Relationship to Occupational Standards

This unit addresses the unit of competency: Perform computer networking

Duration of Unit: 200 hours

Unit Description

This unit covers the competencies required to perform computer networking. It involves identifying network types, configuring network devices, connecting network devices, monitoring network performance, documenting network report, training network users and maintaining of the network.

Summary of Learning Outcomes

Learning Outcomes	Durations (Hours)
1. Identify network type	20
2. Features and functions of computer networks	24
3. Network Protocols and Standards	30
4. Configure network devices	50
5. Maintain Network	46
6. Document network report	30
Total Hours	200

Learning Outcomes, Content and Suggested Assessment Methods:

Learning Outcome	Content	Suggested Assessment Methods
1. Identify network type	1.1. Meaning of terms 1.2. Network components 1.3. Network design and	• Written tests • Oral questioning • Practical tests

Learning Outcome	Content	Suggested Assessment Methods
	architecture 1.4. Types of network topology	• Observation
2. Features and Functions of Computer networks	2.1 Components of a network 2.2 Network types 2.3 Transmission media 2.4 Network topologies 2.5 Network standards	• Written tests • Oral questioning • Practical tests • Observation
3. Network Protocols and standards	3.1 Communication Protocols 3.1.1 OSI Model 3.1.2 TCP/IP Reference model 3.2 IPv4 Addressing 3.2.1 Classful addressing 3.2.2 Private vs Public 3.2.3 Classless addressing • Interdomain routing • Variable subnet masking 3.2.4 IPv6 Addressing 3.2.5 Subnetting IPv4 and IPv6	• Written tests • Oral questioning • Practical tests • Observation
4. Configure Network devices	4.1 Design a Local Area Network 4.1.1 Logical topology 4.1.2 Physical topology 4.2 Assigning IP Addresses 4.2.1 Static 4.2.2 Dynamic 4.3 Configure Routing protocols 4.3.1 Static 4.3.2 Dynamic 4.4 Perform network trouble	• Written tests • Oral questioning • Practical tests • Observation

Learning Outcome	Content	Suggested Assessment Methods
	shooting 4.4.1 Command line tools 4.4.2 Graphical tools	
5. Maintain Network	5.1 Importance of Network Maintenance 5.2 Types of Network Maintenance 5.2.1 Preventive 5.2.2 Corrective 5.2.3 Adaptive 5.3 Network Monitoring Tools 5.3.1 Wireshark 5.3.2 PRTG 5.3.3 NetFlow 5.3.4 SNMP 5.3.5 Syslog 5.4 Network scalability	• Written tests • Oral questioning • Practical tests • Observation
6. Document network report	6.1 Importance of Network Documentation 6.2 Types of Network Reports 6.3 Key Components of a Network Report 6.4 Writing an Executive Summary for Non-Technical Stakeholders	• Written tests • Oral questioning • Practical tests • Observation

Suggested Methods of Instructions

- Instructor led facilitation of theory
- Demonstration by trainer
- Practical work by trainee

- Viewing of related videos
- Group discussions

Recommended Resources for 25 trainees

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

11.	RJ45		300 pcs	1:10
12.	UTP Ethernet Cable		300 metres	1:10
13.	Antistatic gloves		25 pairs	1:1
14.	Wireshark 32/64-bit Latest version		25 pc	1:1
15.	Network simulation tools: -Cisco packet tracer or -GNS3		25 pc	1:1