PERFORM COMPUTER NETWORKING

UNIT CODE: SEC/OS/CS/CR/03/6/A

UNIT DESCRIPTION

This unit covers the competencies required to perform computer networking activities. 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.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. *(Bold and italicised terms are elaborated in the Range)*
1. Identify network type	1.1. Site survey is conducted to determine the user needs and establish *network topology* 1.2. Network design is developed according to the site survey 1.3. *Network components* are identified according to the site survey 1.4. *Network type* is identified as per the client's requirements
2. Configure network devices	2.1. *Network* is installed and configured according to network installation manual. 2.2. IP addressing scheme, subnet masking and routing *protocol* configuration is performed 2.3. Network segmentation is determined as per the Network design. 2.4. *Network privileges* are allocated according to the network configuration. 2.5. Network types are configured as per the type of connection
3. Connect network devices	3.1. Tools, materials and devices for network are identified according to the network type 3.2. Network connection is performed according to National and international communication standards and protocols 3.3. Stability and connectivity tests of cables and equipment is done as per the network type 3.4. Media management is performed as per the industry best practice

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. *(Bold and italicised terms are elaborated in the Range)*
4. Monitor Network performance	4.1. Network *monitoring tools* are identified as per the type of tests to be carried out 4.2. Network monitoring tools are deployed as per the network connection type. 4.3. Network status is determined as per the monitoring report. 4.4. Network is monitored in line with its operation manual
5. Document network report	5.2 Networking report is prepared and filed in the approved format as per the organization policy 5.3 Networking report is shared with the relevant parties 5.4 Test results are document as per the organizations policy 5.5 Network reports are stored in the in the relevant department for reference purpose as per the organization policy
6. Train network users	6.1. Network user are trained on its operation in line with its installation manual 6.2. Users are identified as per the network coverage 6.3. Users are provided with the network operation manual 6.4. User training manuals are prepared according to network functionality 6.5. User training is done according to the user training manual
7. Maintain Network	7.1. Network is optimized between the network components and medium in line with the operation manual. 7.2. *Network security* is applied according to vulnerability of the Network. 7.3. Maintenance schedule is prepared as per the task to be carried out. 7.4. Network updates are scheduled as per the organization policy

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. Network topology may includes but not limited to:	- Star - Ring - Mesh - Hybrid - Point to point
2. Network components may includes but not limited to:	- Routers - Switches - Hub - RJ 45 connectors - Ports - Computers - Printers
3. Network types may includes but not limited to:	- WAN - LAN - PAN
4. Network protocols may includes but not limited to:	- TCPIP - UDP - HTT
5. Monitoring tools may includes but not limited to:	- Ping - Tracert - Speed test
6. Network privileges may includes but not limited to:	- Pprivilege allows a user to perform an action. - The ability to create a file in a directory, or to read or delete a file, access a device, or have read or write permission to a socket for communicating over the Internet
7. Network security Measures may includes but not limited to:	- Intrusion detection systems - Patching and Updating - Port Scanners - Network Sniffers - Vulnerability scanners - Antiviruses

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

- Network Architecture
- Network programming languages
- Network Components and devices
- Network types
- Network security Measures
- Network Monitoring procedures
- Network testing techniques
- Network configuration techniques
- Network protocols
- Network security techniques and procedures
- Network testing procedures

FOUNDATION SKILLS

The individual needs to demonstrate the following foundation skills:

- Communications (verbal and written);
- Proficient in ICT;
- Problem solving
- Decision Making
- Leadership
- Self-training

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and understanding and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
	1.1 Conducted site survey on determining the user needs and establishing of network topology
	1.2 Developed network design in line with the site survey
	1.3 Performed IP addressing scheme, subnet masking and routing protocol configuration of the network
	1.4 Network privileges are allocated according to the network configuration.
	1.5 Performed network connection according to the National and international communication standards
	1.6 Identified network monitoring as per the type of tests that were to be carried out
	1.7 Monitored network protocols in line with its operation manual
	1.8 Prepared and filled network report in line with the approved format of the organization

		1.9 Prepared user training manuals according to the software functionality
		1.10 Applied network security according to the vulnerability of the Network
		1.11 Components were identified during site survey
2.	Resource Implications for competent certification	The following resources should be provided: 2.1 Access to relevant workplace where assessment can take place 2.2 Appropriately simulated environment where assessment can take place 2.3 Materials relevant to the proposed activity or tasks
3.	Methods of Assessment	Competency may be assessed through: 3.1 Observation 3.2 Oral questioning 3.3 Practical demonstration
4.	Context of Assessment	Competency may be assessed individually in the actual workplace and simulated setting of the actual work place
5.	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.