Course : Fundamental of Networking		
Course specification: theoretical & practical	Course code: CPT 121	Contact hours:96
Theoretical: 2 hrs/wk		Practical : 4 hrs/wk

General objectives :-

1. Understand the Network Topologies and Fundamentals of Data Communication
2. Know the types of Data Communication Devices and their Functions
3. Identify Network cables, Plugs and Patchboard
4. Describe how the Peer-to-Peer and Server/Client Network are Installed and Configured.

Course : Fundamentals of Networking		Course code: net104		Credit hours: 96	
		Theoretical:2 hours/week			
	Year: 1 Semester: 1	Prerequisites: none		Practical: 4 hours/week	
	Theoretical Content			Practical Content	
Objective :- 1.0 Understand Network Topologies and the Fundamentals Data Communications					
week	Specific Learning Outcome:	Teachers Activities	Resources	Specific Learning Outcome:	Teachers Activities	Resources
1	To be able to : 1.1 Define data communications & networking 1.2 Identify the need for the communication between computers and networks.	Explain and discuss with students the data communication and networking Explain the need for communication between computers and networks	Computer network lab The computers should be supported by modems and related software programs			
2	1.3 Data, information and device sharing 1.4 Understand transmission modes and transmission techniques	Explain the need for data, information and device sharing Explain the types of transmission modes				
3	1.5 Know the types of Networks and their structures. 1.6 Know the two types of network operating system and when they are and their advantages and disadvantages.	Explain the four types of networks (LAN, MAN, WAN and LAWN with examples. Explain how the Server/client and Peer-to-Peer network systems operate.				
4	1.6 Know the four types of network topologies	Explain the four kinds of network topologies. Their merits and demerits				
Objective: 2.1 Know the types of Data Communication Devices and their Functions						
identify the fundamentals of computer network & functions &network types and services						

5	**To be able to know:** 2.1 The types Network Interface card –NIC and the functions of the attach ports.	Show and explain the operation of the different NICs • 16-bit ISA • MCA • PCMCIA	The respective cards and plugs/connectors and slots associated with them.	**To be able to** Identify and differentiate among these card and their port(s) connections	Show the cards and explain when each is used and how they are identified and used.	The respective cards and plugs/connectors and slots associated with them.
6	2.2 The functions of a Hub, Bridge and Switch their merits and demerits.	Explain • How each of these data communication devices operates, when they are used. • The merits and demerits of each device	All the data communication devices	Identify each device and know it is connected to form a network and its plugs connection.	Show the data communication device and explain when each is used and how each can be identified and used.	All the data communication devices
7	2.3 The functions of a Router and a Gateway their merits and demerits.					
8	2.4 The features and characteristics of wireless data communication devices	Explain how wireless data communication devices function, their characteristics and hotspots	Wireless data communication devices and wireless laptops			
Objective 3.0 Identify Network cables, Plugs and Patchboard						
9	To be able to 3.1 Know the features, characteristics, merits and demerits of the following cables: • Co-axial • Fibre Optic	To Describe the features, characteristics, merits and demerits the various types of network cables. Identify • Indoor and Outdoor Fibre Optic cable	Questions and answers diagrams Tables Capability to project the Desktop to all students A comprehensive workbook for students	Explain how to Cabling system principles and know its advantages Design and install cabling system Cat 5 and corel component Twisted pair installation and connection Twisted pair control Coaxial cable components and types Coaxial cable control Testing of cabling system Know technical rooms characteristics	Demonstrate the installation process Supervise the laboratory and support students in their practical work Explain for the students the principles and rules of cabling system Explain the different components of cabling system Show the installation	Documentation + cabling hardware (cramping tool Rj 45 connecters RJ 45 sockets twisted pair cables distributors. Coaxial cables and its requirements Personal computers Different network Cables (eg : Coaxial Twisted Pair Network cables tools Testers Connectors
10	3.2Know the features, characteristics, merits and demerits of the Twisted pair cable	Identify • Thin net (10 Base2) Cabling • Thicknet (10 Base5) Cabling				

				Know cabling rules Install Fibre Optic Cabling	of cables ,connectors and other network devices	
11	3.3 Know how to connect cables to their respective plugs or patch-board in the case twisted pair	Explain the concept of crossover Explain how colour code is used in terminating of cable and patch-board connection				
Objectives 4.0 :- Describe how the Peer-to-Peer and Server/Client Network are Installed and Configured						
12	To be able to 4.1 Understand IP Addressing	Explain The address classes &subnet mask address		To be able to Describe the address and its classes by using network operating system eg windows		
13	4.2 Know how to install and configure a Peer-to-Peer network.	Explain how to connect a peer-to-peer network using a hub or switch	Manual of devices and installation and configuration procedures	Install a Peer-to-Peer Network	Show how a Peer-to-Peer network is install and configure using Windows-7 OS	Computers Hub or Switch and Windows-7 OS
14	4.3 Know how to install and configure a Server/Client network.	Explain how to connect a Server/Client network using a switch and bridge.		Install a Server/Client Network	Show how a Server/Client network is install and configure using Windows-7 OS	Computers Hub or Switch and a Network operating system
15	4.4. Know how to install and configure a post office system	Explain how to instal and configure a post office system in a Server/Client network		Install a post office server system	Show how a post office server is install	Computer and post office software