

Mymensingh Polytechnic Institute

Computer Science & Engineering Technology

Computer Networking (28562), 6th Semester

Semester Plan

Week	Content	Remarks
1 st & 2 nd	1. Computer network. 1.1 Define Computer Network. 1.2. State the concept of computer Network. 1.3 Mention elements of computer network. 1.4 Describe the advantages of Computer network. 1.5 State the application of computer network. 1.6 Describe client / server and peer-to-peer network. 1.7 State LAN, MANs and WANs. 1.7 Describe the general features of LAN, MANs and WANs.	
3 rd & 4 th	2. Network topologies. 2.1 Define topology. 2.2 Difference between physical and logical topology. 2.3 Define point-to-point and multi point connections. 2.4 List different types of topologies. 2.4 Describe the physical connection of bus, ring, star and hybrid topologies. 2.5 Mention the advantages and disadvantages of bus, ring, star and hybrid topologies. 2.6 Describe the factors to select a particular topology. 2.7 Describe the logical topologies of a token ring network.	Class Test-1
5 th	3. OSI model. 3.1 Define communication standards. 3.2 Define OSI Model & DoD model. 3.3 Differentiate between DoD model and the OSI reference model. 3.4 List the global forum and regulatory authority of communication and computer Network sector. 3.5 State the function of IEEE in the communication and computer Network sector. 3.6 State International Standard organization-ISO. 3.7 Describe the necessity to develop OSI Model. 3.7 Describe the functions of each layer of the OSI reference model.	Quiz Test 1
6 th & 7 th	4. Communication and network protocols. 4.1 Define network protocol. 4.2 Describe the main elements of protocol. 4.3 Describe the characteristics of different types of protocol. 4.4 Describe the functions of protocol. 4.5 List different types of network protocols. 4.6 State TCP/IP. 4.7 State the advantages and disadvantages of OSI andTCP/IP. 4.8 Describe the functions of TCP/IP.	Class Test-2

8 th	Mid-Term Exam	
9 th	<p>5. Physical layer and Data Link layer of the OSI Reference Model</p> <p>5.1 Draw the position diagram of Physical layer in the Internet model.</p> <p>5.2 Describe the functions and services of Physical layer.</p> <p>5.3 Draw the position diagram of Data link layer in the Internet model.</p> <p>5.4 Describe the duties and responsibilities of Data link layer.</p> <p>5.5 State the functions of LLC and MAC sub layer.</p> <p>5.6 Describe the function of network connectivity devices used in Physical and Data link layers (Repeater, modems, Hub/ Switch and bridge)</p>	Quiz Test-2
10 th	<p>6. Network layer and Transport layer of the OSI reference model.</p> <p>6.1 Draw the position diagram of Network layer and Transport layer.</p> <p>6.2 Describe the functions of Network layer and Transport layer.</p> <p>6.3 Describe Transmission control protocol- TCP and userdatagram Protocol -UDP.</p> <p>6.4 Describe IP, RIP, OSPF, and EIGRP.</p> <p>6.5 Describe the responsibilities of Network layer and Transport layer.</p> <p>6.6 Describe the function of Router and Switch.</p>	
11 th	<p>7. Presentation layer, Session Layer and Application layer of the OSI reference model.</p> <p>7.1. Define VLANs</p> <p>7.2. State 802.1Q and ISL Encapsulation.</p> <p>7.3. Define Trunk link</p> <p>7.4. Describe Router on a Stick.</p> <p>7.5. Describe Inter-VLAN routing by multilayer switch</p> <p>7.6. State the configuration of VLAN Trunking protocol (VTP)</p>	Class Test-3
12 th	<p>8. Hubs, Repeaters, Bridges, Switches and Routers.</p> <p>8.1 List the different network device.</p> <p>8.2 Mention the layer of different network device.</p> <p>8.3 Describe the functions of Hubs, Repeaters, Bridges Switches and Routers.</p> <p>8.4 Mention the types of Hubs/ Switches.</p> <p>8.5 Describe the important features of passive, active and intelligent Hubs/ Switches.</p> <p>8.6 Describe the important features of Repeaters, Bridges, Switches and Routers.</p> <p>8.7 Differentiate among Bridges, Repeaters, Switches and Routers.</p>	Quiz Test 3
13 th	<p>9. Sub-netting, VLSMs, and Summarization</p> <p>9.1. Define Sub-netting.</p> <p>9.2. State Classless inter domain routing (CIDR).</p> <p>9.3. Define Variable length subnet mask (VLSMs)</p> <p>9.4. Describe VLSM design.</p> <p>9.5. State the procedure to implement VLSM Network</p>	Class Test 4

	9.6. Define Summarization.	
14 th	10. Operation and features of Client Server Network. 10.1 Define Client Server Network. 10.2 Describe role of Client Server Network. List different type of server. 10.3 Describe DNS Server, Web Server, Mail Server, Proxy server, File Server and DHCP Server. 10.4 State the Advantages & Disadvantages of Client Server Network.	Quiz Test-4
15 th	11. Understand Link and Gateway Redundancy 11.1. Define Redundancy 11.2. State Static Routing Redundancy 11.3. Define Hot Standby Router Protocol (HSRP) 11.4. Define Virtual Router Redundancy Protocol (VRRP) 11.5. Demonstrate Gateway Load Balancing Protocol (GLBP).	Class Test-5
16 th	12. Understand Fourth Industrial Revolution (IR 4.0) 12.1 State Internet of Things (IoT). 12.2 Explain Big Data. 12.3 State Cloud Computing. 12.4 Explain System Integration. 12.5 State Autonomous Vehicles System & Autonomous Robots 12.6 Explain augmented reality. 12.7 Explain 3D Printing 12.8 Explain Additive Manufacturing.	Final Test