Bangladesh Sweden Polytechnic Institute

Department of Computer Technology

Semester Plan – 2017

Semester: 7th (Seventh) **Subject Code**: 6673

Name of the Subject: Data Communication and Computer Network – II

Name of the Teacher: Engr. Mohammad Tarequl Islam

Designation: Instructor(Computer)

T	P	C
0	6	2

Week	Date	Class No.	Topic Details	Theory Class	Practical Class	Class Test	Quiz Test
Week-1		01	**Chapter – 1**: **Understand computer communication Networking.** 1.1 Mention the problems of communicating devices for directly point-to-point connection with their solutions. 1.2 Describe the way of connecting network stations via communication network. 1.3 Mention the categories of Communication Network based on data transfer technique.	**T1**			
		02	1.4 Mention the difference between switching and broadcast communication networks. 1.5 Describe the role of circuit switching, packet switching, frame relay, ATM and ISDN. 1.6 Mention the difference between circuit switching and packet switching techniques.	**T2**			
		03	❖ **Practical**: Install a Linux based server.		**P1**		
		04	❖ **Practical**: Install a Linux based server. (Review the Previous Practical Class)		**P2**		
Week-2		05	**Chapter – 2:** Understand the Server based and peer computer networks. 2.1 Define client, Server and peer computer in a network. 2.2 Describe the Server-based Network and Domains. 2.3 Describe the roles of common types of servers.	**T3**			
		06	2.4 Mention the deference between DNS and DHCP Server 2.5 State the function of Forward and reverse lookup zones.	**T4**			
		07	❖ **Practical:** Assign IP address and Host name.		**P3**		
		08	❖ **Class Test 01 Chapter 1, 2)** ❖ **Practical:** Assign IP address and Host name. (Review the Previous Practical Class)		**P4**	**CL-01**	

Week-3		09	**Chapter – 3**: **Understand the Media access control design issues for LAN System.** 3.1 Mention different techniques of media access control. 3.2 Describe the round robin/ polling, reservation and contention based access control techniques. 3.3 Describe collision on a contention based network	**T5**			
		10	3.4 Describe the operation of CSMA/CD access control. 3.5 Describe the operation of token ring and token bus access control. 3.6 Describe the comparison of media access control techniques (i, e, CSMA/CA Vs CSMA/CD, CSMA/CD Vs Token passing, CSMA/CD Vs Demand priority access control).	**T6**			
		11	❖ **Practical**: Manage Remote Login through TELNET/SSH.		**P5**		
		12	❖ **Quiz Test 01 (Chapter 1, 2, 3)**				**QT-01**
Week-4		13	**Chapter – 4: Understand the OSI model.** 4.1 Describe the concept of Defacto and Dejure standards. 4.2 List the name of standard organizations responsible for network standards. 4.3 State the ISO issues.	**T7**			
		14	4.4 Draw the layers of the OSI reference model. 4.5 Describe the function of each layers of OSI model. 4.6 Mention the protocols of each layer.	**T8**			
		15	❖ **Practical:** Configure File Transfer protocol (FTP)/ Network File System (NFS).		**P6**		
		16	❖ **Practical:** Configure File Transfer system using TCP and UDP.		**P7**		

Week-5		**17**	**Chapter – 5: Understand the TCP/IP protocol architecture.** 5.1 Define process, host and network. 5.2 Mention the layers of TCP/IP protocol architecture. 5.3 Explain the functions of each layer of TCP/IP protocol architecture. 5.4 Describe the communication using TCP/IP protocol architecture with Block diagram.	**T9**			
		18	5.5 State the Hierarchy of key protocols commonly implemented as part of the TCP/IP protocol suite. 5.6 Explain the role of TCP/IP protocol interface. 5.7 Compare the layering structure of TCP/IP suite and OSI model.	**T10**			
		19	❖ **Practical**: Configure Samba server configuration. ❖ **Quiz Test 02 (From Chapter 1 to 5)**		**P8**		**QT-02**
		20	❖ **Practical:** Install and manage Domain name system (DNS).		**P9**		
Week-6		**21**	**Chapter – 6: Understand the IEEE 802.x standards and Ethernet.** 6.1 State the objective of the 802 project model. 6.2 Describe the important features of the IEEE 802 categories. 6.3 State the relation between standard IEEE 802 and OSI model. 6.4 Mention Ethernet Specification of 100 base 2 and 100 base 5 cabling system. 6.5 Describe 5-4-3 rule of thumb for thicknet and thinnet Ethernet LAN.	**T11**			
		22	**Chapter – 7: Understand Fiber Distributed Data Interface (FDDI).** 7.1 Describe the working procedure of FDDI. 7.2 Mention the advantages and disadvantages of using FDDI in networking. 7.3 Describe the role of dual counter rotating ring in the event of device or cable failure in FDDI. 7.4 Describe the important features of FDDI components. 7.5 Draw the layout diagram of FDDI network using concentrators.	**T12**			
		23	❖ **Class Test 02 (From Chapter 1 to 7)**			**CL-02**	
		24	❖ **Practical:** Manage Dynamic Host Configuration protocol (DHCP).		**P10**		

Week-7		**25**	**Chapter – 8: Understand Wireless Networking.** 8.1 Define wireless Networking. 8.2 Mention the need of wireless Network. 8.3 Define wireless access Point(WAP). 8.4 Describe transmission techniques of wireless Networking.	**T13**			
		26	8.5 Mention the types of wireless Network. 8.6 Mention the uses of wireless Network. 8.7 Describe the role of Wi-Fi/ Wi-Max technology in modern communication system. 8.8 Describe about Bluetooth Technology	**T14**			
		27	❖ **Practical:** Manage DNS client and secondary DNS		**P11**		
		28	❖ **Practical:** Configure Mail server, Web server and proxy server.		**P12**		
Week-8		**29**	**Chapter – 09: Understand the internetwork connectivity devices.** 9.1 List the common internetwork connectivity devices. 9.2 Describe the function and operation of Routers, CSU/DSUs and Gateways. 9.3 State the meaning of alternative routes of Routers. 9.4 Mention the features of different types of Routers. 9.5 Mention the difference between Bridges and Routers. 9.6 Mention the features of Routers and Gateways. 9.7 Describe the uses of Gateways	**T15**			
		30	**Chapter – 10: Understand connection services.** 10.1 Mention the common network services. 10.2 Define Dial-Up lines and leased lines. 10.3 Define Remote Access Service (RAS). 10.4 State the meaning and use of VPN, DUN, and PSTN. 10.5 Describe RAS protocols. 10.6 Describe the limitations of RAS.	**T16**			
		31	**Class Test 03 (Chapter 8, 9, 10)**			**CL-03**	
		32	❖ **Practical:** Review the Previous Practical Class (Manage DNS client and secondary DNS)		**P13**		

Week-9		**33**	**Chapter – 11: Understand the network security.** 11.1 Define network security. 11.2 Mention the essentials of LAN security. 11.3 Describe the levels of security. 11.4 Describe the role of network management. 11.5 State the meaning of the terms: Control, Management, Maintenance and Administration in networking. 11.6 Describe the network management functions.	**T17**			
		34	**Chapter – 12: understand the concept of cloud networking** 12.1 Define cloud computing and storage. 12.2 State the concept of big data. 12.3 Define Virtual Private Server and storage management. 12.4 State the concept of NoSQL Database for cloud system. 12.5 Define Apps and social media data mining.	**T18**			
		35	❖ **Practical:** Review the Previous Practical Class (Configure Mail server, Web server and proxy server.)		**P14**		
		36	❖ **Practical:** Implement a wireless network with minimum five computers.		**P15**		
Week-10		**37**	**Quiz Test 03 (From Chapter 11 & 12)**				**QT-03**
		38	**Class Test 04 (From Chapter 08 to 12)**			**CL-04**	
		39	❖ **Practical:** Review the Previous Practical Class		**P16**		
		40	❖ **Practical:** Review the Previous Practical Class		**P17**		
Week-11		**41**	Discussion About Computer communication network and media access control methods	**T19**			
		42	Network architectures and standards, Network connectivity and services	**T20**			
		43	❖ **Practical:** Review the Previous Practical Class		**P18**		
		44	❖ **Practical:** Review the Previous Practical Class		**P19**		

Week-12		**45**	**Talk about** Network security and management	**T21**			
		46	**Talk about** Implement a wireless network with minimum five computers.	**T22**			
		47	❖ **Practical:** Implement a wireless network with minimum five computers. (Review)		**P20**		
		48	❖ **Practical:** Implement a wireless network with minimum five computers. (Review)		**P21**		

REFERENCE BOOKS

- Data & Computer Communications, –by Willian Stallings
- Computer Networks, - by Andrew S. Tanenbaum.
- Networking Essentials, - MCSE Study Guide.
- Learning Red hat Linux-By Bill Mc Carty.
- Linux- By Kamaran Hossain