Mangalmay Institute of Management Technology
Greater Noida (U.P.)

Lesson Plan

Program: BCA **Semester:** V **Course Code**: BCA-503 **Course Name:** Computer Network

Course Objectives

CO 1. To introduce students with the concept of Computer Network and its models.
CO 2. To be able to know about the different types of Transmission media and its working.
CO 3. To introduce students with the concepts of Telephone, Protocols and Point to Point controls.
CO 4. To be able to know about the different network devices and it working.
CO 5. To familiarize the student about OSI Model.

Session Duration: 60 minutes

Participants: BCA Fifth Semester Students

Entry level knowledge and skills of students

i. Computer Fundamentals

Equipment required in Classroom/ Laboratory/ Workshop

i. Projector
ii. White Board & Marker

Assessment Schemes

S. No.	Criteria	Marks (100)
1	CCSU End Term Examination	75
2	Internal Evaluation Scheme	25
2(a)	Teacher Assessment (Continuous Evaluation) (Assignment & attendance)	25
2(a)(i)	Assignment -1	10
2(a)(ii)	Assignment -2	10
2(a)(iii)	Attendance (compulsory)	5

Course Outcomes

(CO1): Able to understand the concept of Computer Network and its Models. ***Understanding (K2)***

(CO2): Able to understand the various types of Transmission Media, and their working.

Understanding (K2)

(CO3): Able to understand the concepts of Telephone, Protocols and Point to Point controls.

Understanding (K2)

(CO4): Able to understand the different types Network Devices. ***Understanding (K2)***

(CO5): Able to understand the OSI Model ***Understanding (K2)***

L. No.	Topics	Sub Topics	Date of implementation	Pedagogy	CO-Covered	Faculty Sign	HoD's Remark with Date
Unit – 1							
1.	Discussion about the Subject Syllabus and Learning outcomes	Course Objective & Course Outcome			**CO-1 TO CO-5**		
2.	Concept of Computer Network	Introduction to Data Communication		• Lecture • Group Discussion	**CO-1**		
3.		Data Networking and Application		• Lecture • Group Discussion	**CO-1**		
4.		Protocols and Network Topologies		• Lecture • Group Discussion	**CO-1**		
5.		Continue..		• Lecture • Group Discussion			
6.		Transmission Mode		• Lecture • Group Discussion	**CO-1**		
7.		Categories of Network		• Lecture • Group Discussion			
8.		OSI Layers		• Lecture • Group Discussion	**CO-1**		
9.		Continue..		• Lecture • Group Discussion	**CO-1**		
10.		TCP/IP Model		• Lecture • Group Discussion	**CO-1**		
11.		Continue..		• Lecture • Group Discussion	**CO-1**		
12.		Digital Data Transmission and its Type		• Lecture • Group Discussion	**CO-1**		
13.		Continue..		• Lecture • Group Discussion	**CO-1**		
14.		Discussion and Revision of Unit 1, Discussion University questions		Discussion	**CO-1**		

Unit – 2							
15.	**Transmission Media**	Guided and unguided		• Lecture • Group Discussion	**CO-2**		
16.		Continue..		• Lecture • Group Discussion	**CO-2**		
17.		Attenuation: distortion, noise, throughput		• Lecture • Group Discussion	**CO-2**		
18.		Continue..		• Lecture • Group Discussion	**CO-2**		
19.		Propagation speed and time, wavelength		• Lecture • Group Discussion	**CO-2**		
20.		Shannon capacity, comparison of media		• Lecture • Group Discussion	**CO-2**		
21.		Continue..		• Lecture • Group Discussion	**CO-2**		
22.		Discussion and Revision of Unit 2, Discussion University questions		Discussion	**CO-2**		
Unit – 3							
23.	**Telephony**	Multiplexing		• Lecture • Group Discussion	**CO-3**		
24.		Continue..		• Lecture • Group Discussion	**CO-3**		
25.		Error detection and its type		• Lecture Group Discussion	**CO-3**		
26.		Error Detection Methods		• Lecture • Group Discussion	**CO-3**		
27.		Continue..		• Lecture • Group Discussion	**CO-3**		
28.		Error Correction		• Lecture • Group Discussion	**CO-3**		
29.		Continue..		• Lecture • Group Discussion	**CO-3**		
30.		Switching Techniques		• Lecture • Group Discussion	**CO-3**		
31.		Continue..		• Lecture	**CO-3**		

				• Group Discussion			
32.	**Data link control protocols**	Function of Data Link Layer		• Lecture • Group Discussion	**CO-3**		
33.		Line discipline, flow control, error control		• Lecture • Group Discussion	**CO-3**		
34.		Synchronous and asynchronous protocols		• Lecture • Group Discussion	**CO-3**		
35.		Character and bit oriented protocols, Link access procedures.		• Lecture • Group Discussion	**CO-3**		
36.	**Point to point controls**	Transmission states		• Lecture • Group Discussion	**CO-3**		
37.		PPP layers and its Components: LCP, NCP		• Lecture • Group Discussion	**CO-3**		
38.		Continue..		• Lecture • Group Discussion	**CO-3**		
39.		ISDN Layers		• Lecture • Group Discussion	**CO-3**		
40.		Continue..		• Lecture • Group Discussion	**CO-3**		
41.		Discussion and Revision of Unit 3, Discussion University questions		• Discussion	**CO-3**		
Unit – 4							
42.	**Devices**	Repeaters, bridges, gateways, routers,		• Lecture • Group Discussion	**CO-4**		
43.		The Network Layer; Design issues		• Lecture • Group Discussion	**CO-4**		
44.		Routing algorithms		• Lecture • Group Discussion	**CO-4**		
45.		Continue..		• Lecture • Group Discussion	**CO-4**		
46.		Congestion control Algorithms		• Lecture • Group Discussion	**CO-4**		
47.		Internetworking, Network-Layer in the internet		• Lecture • Group Discussion	**CO-4**		
48.		Discussion and Revision of Unit 4, Discussion		• Discussion	**CO-4**		

		University questions					
Unit – 5							
49.	**Transport and upper layers in OSI Model**	Transport layer Functions		• Lecture • Group Discussion	**CO-5**		
50.		Session layers Functions		• Lecture • Group Discussion	**CO-5**		
51.		Presentation layer Functions		• Lecture • Group Discussion	**CO-5**		
52.		Application layer Functions		• Lecture • Group Discussion	**CO-5**		
53.		Discussion and Revision of Unit 5, Discussion on University questions		Discussion	**CO-5**		

Text Books:

1. Neeraj Kr. Sharma, “Computer Networks”; Thakur Publication, 1st Ed. 2014
2. S.S.Shinde, “Computer Network”, New Age International Publication, 2nd Ed. 2020.

Reference Books:

1. A.S.Tanenbaum, “Computer Networks”; Pearson Education Asia, 4th Ed. 2003.
2. Behrouz A.Forouzan, “Data Communication and Networking”, 3rd Ed. Tata McGraw Hill, 2004.
3. William Stallings, “Data and Computer Communications”, Pearson education Asia, 7th Ed., 2002.