

MOHAMED SATHAK A J COLLEGE OF ENGINEERING

LESSON PLAN							
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING							
Name of the Subject	Communication Networks	Regulation	2017				
Subject Code	EC8551	Year / Sem	III/VI				
Course Objective							
1.Understand the division of network functionalities into layers							
2.Be familiar with the components required to build different types of networks.							
3.Be exposed to the required functionality at each layer.							
4.Learn the flow control and congestion control algorithms.							
Course Outcome							
Upon completion of the course, the students will be able to:							
1.Identify the components required to build different types of networks.							
2.Choose the required functionality at each layer for given application.							
3.Identify the best routing algorithm.							
4.Identify solution for each functionality at each layer.							
5.Predict the flow of information from one node to another node in the network.							
Sl. No.	Topic(s)	T / R*	Periods Required	Mode of Teaching (BB / PPT / NPTEL / MOOC / etc)	Blooms Level (L1-L6)	CO	PO
		Book					
UNIT-I FUNDAMENTALS & LINK LAYER							
1	Overview of Data Communications- Networks	T1	1	PPT	L1	CO1	PO1
2	Building Network and its types	T1	1	BB	L2	CO1	PO1
3	Overview of Internet Protocol Layering	T1	1	BB	L1	CO1	PO1-PO2
4	OSI Mode	T1	1	BB	L2	CO1	PO2
5	Physical Layer	T1	1	PPT	L2	CO1	PO3
6	Overview of Data and Signals	T1	1	PPT	L2	CO1	PO1-PO3
7	Introduction to Data Link Layer	T1	1	PPT	L2	CO1	PO1-PO3
8	Link layer Addressing	T1	1	PPT	L2	CO1	PO1-PO3
9	Error Detection and Correction	T1	1	PPT	L2	CO1	PO1-PO3
Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any							
Evaluation method : Assignment on Networks and its types							
UNIT II MEDIA ACCESS & INTERNETWORKING							
10	Overview of Data link Control Media access control	T1	1	BB	L2	CO2	PO1-PO3
11	Ethernet (802.3) ,Wireless LANs	T1	1	PPT	L2	CO2	PO1-PO3
12	Bluetooth	T1	1	BB	L3	CO2	PO1-PO3
13	WiFi, 6LowPAN, Zigbee	T1	1	BB	L3	CO2	PO1-PO3
14	Network layer services	T1	1	BB	L3	CO2	PO1-PO3
15	Packet Switching	T1	1	BB	L2	CO2	PO1-PO3
16	IPV4 Address	T1	1	PPT	L2	CO2	PO1-PO3
17	Network layer protocols (IP,)	T1	1	BB	L2	CO2	PO1-PO3
18	ICMP, Mobile IP	T1	1	BB	L2	CO2	PO1-PO3
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any							
Evaluation method Assignment, MCQ on Networking protocol							
UNIT III ROUTING							
19	Routing-Introduction	T1	1	BB	L4	CO3	PO1-PO3
20	Unicast RoutingAlgorithms — Protocols	T1	1	PPT	L2	CO3	PO1-PO3
21	Multicast Routing and its basics	T1	1	BB	L2	CO3	PO1-PO3
22	Overview of Intradomain and interdomain protocols	T1, R1	1	PPT	L2	CO3	PO1-PO3
23	RIP,OSPF	T1, R1	1	BB	L2		PO1-PO3
24	BGP	T1, R1	1	BB	L2	CO3	PO1-PO3
25	IPv6 Addressing	T1, R1	2	BB	L2	CO3	PO1-PO3
26	Transition from IPv4 to IPv6	T1,R1	1	BB	L4	CO3	PO1-PO3
Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any							
Evaluation method: Do experiment and analyse about Distance Vector routing method							

UNIT IV		TRANSPORT LAYER								
27	TRANSPORT LAYER	T1	1	PPT	L1	CO4	PO1-PO3			
28	UDP	T1	1	PPT	L2	CO4	PO1-PO3			
29	Reliable byte stream (TCP)	T1	1	PPT	L2	CO4	PO1-PO3			
30	Connection management	T1	1	PPT	L2	CO4	PO1-PO3			
31	TCP Congestion control	T1	1	PPT	L4	CO4	PO1-PO3			
32	Retransmission	T1	1	PPT	L2	CO4	PO1-PO3			
33	Flow Control	T1	1	PPT	L4	CO4	PO1-PO3			
34	Congestion avoidance (DECbit, RED)	T1	1	PPT	L4	CO4	PO1-PO3			
35	QOS- Application requirements	T1	1	PPT	L2	CO4	PO1-PO3			
Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any										
Evaluation method : Assignment- Connection Management										
UNIT V		APPLICATION LAYER								
36	Application Layer Paradigms	T1	1	BB	L2	CO5	PO1-PO3			
37	Client Server Programming	T1	1	BB	L2	CO5	PO1-PO3			
38	World Wide Web and HTTP	T1	1	BB	L2		PO1-PO3			
39	DNS- -Electronic Mail (SMTP, POP3, IMAP, MIME)	T1	2	BB	L2	CO5	PO1-PO3			
40	Peer to Peer Networks	T1	1	BB	L2	CO5	PO1-PO3			
41	Need for Cryptography and Network Security	T1	1	BB	L4	CO5	PO1-PO3			
42	Firewalls	T1, R1	1	PPT	L2	CO5	PO1-PO3			
43	Revision	T1, R1	1	PPT	L2	CO5	PO1-PO3			
Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any										
Evaluation method : Case study about Network security and cryptography										
Content Beyond the Syllabus Planned										
1	Plan to give the assignment : 1.Wireless Router									
Text Books										
1	Larry L. Peterson, Bruce S. Davie, “Computer Networks: A systems approach”, Fifth Edition, Morgan Kaufmann Publishers, 2011.									
Reference Books										
1	James F. Kurose, Keith W. Ross, “Computer Networking - A Top-Down Approach Featuring the Internet”, Fifth Edition, Pearson Education, 2009.									
2	Nader. F. Mir, “Computer and Communication Networks”, Pearson Prentice Hall Publishers,2010									
3	Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, “Computer Networks: An Open Source Approach”, Mc Graw Hill Publisher, 2011.									
4	Behrouz A. Forouzan, “Data communication and Networking”, Fourth Edition, Tata McGraw –Hill,2011									
6	http://nptel.ac.in/									
Website / URL References										
1	https://www.geeksforgeeks.org/computer-networks-tutorials									
Blooms Level										
Level 1 (L1) : Remembering		Lower Order Thinking	Fixed Hour Exams	Level 4 (L4) : Analysing				Higher Order Thinkin g	Projects / Mini Projects	
Level 2 (L2) : Understanding				Level 5 (L5) : Evaluating						
Level 3 (L3) : Applying				Level 6 (L6) : Creating						
Mapping syllabus with Bloom’s Taxonomy LOT and HOT										
Unit No	Unit Name	L1	L2	L3	L4	L5	L6	LOT	HOT	Total
Unit 1	FUNDAMENTALS & LINK LAYER	2	7	0	0	0	0	9	0	9
Unit 2	MEDIA ACCESS & INTERNETWORKING	0	6	3	0	0	0	9	0	9
Unit 3	ROUTING	0	5	0	4	0	0	5	4	9
Unit 4	TRANSPORT LAYER	1	5	0	3	0	0	6	3	9
Unit 5	APPLICATION LAYER	0	6	0	3	0	0	6	3	9
Total		3	21	7	2	3	4	35	10	45
Total Percentage		6.67	46.67	15.56	4.44	6.67	8.89	77.78	22.22	100

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	0	0	0	0	0	0	0	0	3	2
CO2	3	3	3	0	0	0	0	0	0	0	0	0	3	2
CO3	3	3	3	3	0	0	0	0	0	0	0	0	3	2
CO4	3	3	3	3	0	0	0	0	0	0	0	0	3	2
CO5	3	3	3	0	0	0	0	0	0	0	0	0	3	2
Avg	3	3	3	2	0	0	0	0	0	0	0	0	3	2
Justification for CO-PO mapping														
CO1	Basic knowledge to build network (Engg.Knowledge, Analysis,Design)													
CO2	Functions of each layer (Engg.Knowledge, Analysis,Design)													
CO3	Routing Algorithm(Engg.Knowledge, Analysis,Design)													
CO4	Functions of transport layer (Engg.Knowledge, Analysis,Design)													
CO5	Funtions of Application Layer (Engg.Knowledge, Analysis,Design)													
3	High level				2	Moderate level				1	Low level			

Name & Sign of Subject Expert : S.PIRIYADHARSHINI AP/ECE
Head of the Department :