



SOCIETY OF ST. FRANCIS XAVIER, PILAR'S
FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

(Approved by AICTE & Affiliated to University of Mumbai)

Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai - 400 050.

Phone : (022) 6711 4000, 6711 4101, 6711 4104

Website : www.frcre.ac.in • Email : crce@fragnel.edu.in

Computer Engineering (Academic Year :2023-2024)

Course Code: CSC503	
Course Name: Computer Network	
Course Teacher: Prof. Jagruti Nagaonkar	
Course Outcomes (CO): <i>At the End of the course students will be able to</i>	
<i>CSC503.1</i>	<i>Enumerate the functions of the different layers of Network Software Models.</i>
<i>CSC503.2</i>	<i>Identify the characteristics of network devices and media used to design network.</i>
<i>CSC503.3</i>	Explore different design issues and protocol of Data link Layer
<i>CSC503.4</i>	Design a network using IP addressing and subnetting
<i>CSC503.5</i>	<i>Explore protocols of transport layer and application layer</i>



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Course Lesson Plan

Sr. No.	Proposed Date	Actual Date	Topics	CO	Teachers Remark	HOD's Remark
			Module 1: Introduction to networking			
1	10/7		Syllabus and CO discussion, Introduction to networking, History and development of computer network,	--		
2	11/7		Introduction to analog and digital communication, modulation concept (Curriculum gap), Network software and hardware components	CO1		
3	14/7		Protocol hierarchies, design issues for the layers, connection oriented and connectionless services	CO1		
4	17/7		OSI model	CO1		
5	18/7		Different Addressing modes with examples, TCP/IP model	CO1		
6	21/7		TCP/IP model (contd.), Different switching techniques	CO1		
			Module 2: Physical layer			
7	24/7		Guided Transmission Media: Twisted pair, Coaxial	CO2		
8	25/7		Unguided media (Wireless Transmission): Radio Waves, Bluetooth, Infrared, virtual LAN	CO2		



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		Module 3: Data link layer			
9	28/7	DLL Design Issues (Services, Error Control, Flow Control)	CO3		
10	31/7	Different Framing methods	CO3		
11	01/8	Framing method (contd)	CO3		
12	03/8	Examples based on Error Detection and Correction ,VRC ,LRC,CRC, Checksum)	CO3		
13	04/8	Examples based on Hamming code error Detection and correction	CO3		
14	07/8	Necessity of flow control, Flow control algorithms – Sliding Window, Stop & wait,	CO3		
15	08/8	Flow control algorithm-GoBack N,Selective repeat	CO3		
16	11/8	Medium Access Control sublayer	CO3		
	14/8	Channel Allocation problem, Multiple access Protocol (Aloha, Carrier Sense Access (CSMA/CD),	CO3	Quiz 1	
17	17/8	Elementary data link protocol (HDLC,PPP)	CO3	Assignment1	
18	21/8	Revision of module 1 and 3			
19	22/8	Module 4: Network layer Network Layer design issues, Communication Primitives: Unicast, Multicast, Broadcast, IPv4 Protocol	CO4		
20	25/8	Subnetting, Supernetting design problems	CO4		
		28/8-30/8 Unit Test-1			
21	1/9	Subnetting, Supernetting design problems (contd...)	CO4		
22	4/9	Network Address Translation (NAT), IPv6	CO4		



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23	5/9		Routing algorithms: Shortest Path (Dijkstra's), Link state routing, Distance Vector Routing	CO4		
24	8/9		Protocols - ARP, RARP, ICMP, IGMP Open loop congestion control, Closed loop congestion control, QoS parameters, Token & Leaky bucket algorithms	CO4		
25	11/9		Congestion control algorithms: Open loop congestion control, Closed loop congestion control, QoS parameter, Token and leaky bucket algorithm	CO4		
26	12/9		Revision of module 4 and Activity based learning (Crossword puzzle) Module 5: Transport Layer			
27	15/9		The Transport Service: Transport service primitives, Berkeley Sockets	CO5		
28	18/9		Connection management (Handshake), UDP TCP, TCP state transition, TCP timers	CO5		
			19/9/23 – 22/9/23 -MID TERM BREAK	CO5		
29	25/9		TCP Flow control (sliding Window), TCP Congestion Control: Slow Start	CO5		
			Module 6: Application layer			
30	26/9		DNS, HTTP, SMTP,	CO5	Assignment 2	
32	29/9		Telnet, FTP, DHCP	CO5	Quiz2	
33	3/10		Revision	All COs		
34	06/10		Revision	All COs		
			9 th Oct-11Oct 2023 UT2			
35	13/10		Remedial	All COs		
36	16/10		University Paper solving	All COs		

Commented [SN1]:



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19/10	University Paper solving			
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Text books:

1. A.S. Tanenbaum, Computer Networks, 4th edition Pearson Education.
2. B.A. Forouzan, Data Communications and Networking, 5th edition, TMH.
3. James F. Kurose, Keith W. Ross, Computer Networking, A Top-Down Approach Featuring the Internet, 6th edition, Addison Wesley

Reference Books:

1. S.Keshav, An Engineering Approach To Computer Networking, Pearson
2. Natalia Olifer & Victor Olifer, Computer Networks: Principles, Technologies & Protocols Network Design, Wiley India, 2011.
3. Larry L. Peterson, Bruce S. Davie, Computer Networks: A Systems Approach, Second Edition, The Morgan Kaufmann Series in Networking

Course Instructor: Prof. Jagruti Nagaonkar