DATA COMMUNICATION AND NETWORKING

Semester	Subject Code	Category	Lecture Hrs		Theory Hrs		Practical		Credits
			Per week	Per Sem	Per week	Per Sem	Per week	Per Sem	
V	21CCS5D	Elective - II	5	75	5	75	0	0	3

COURSE OBJECTIVE

Students learn about computer network organization and implementation, obtaining a theoretical understanding of data communication and computer networks, and gaining practical experience in installation, monitoring, and troubleshooting of current LAN systems.

COURSE OUTCOME

On successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	To study the concepts of communication networks, protocols and their Performance	K2
CO2	To study the concepts of transmission Medium and Error Control	K3
CO3	To learn about Switching Concept	K3
CO4	To Study about the X.25layers	K3
CO5	To apply routing Algorithms and understand various internetworking Devices	K4

Knowledge Level – K1-Remember, K2- Understand, K3-Apply, K4-Analyze

MAPPING WITH PROGRAMME OUTCOME

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	M	S	S
CO2	M	S	M	S	S	M
CO3	S	S	S	L	M	S
CO4	S	M	S	M	S	L
CO5	S	M	S	M	S	M

S-Strong. M- Medium, L-Low

UNIT I – BASICS OF DATA COMMUNICATION **15 Hours**

Introduction to Data Communication, Network, Protocols & standards and standards organizations - Line Configuration - Topology -Transmission mode - Classification of Network - OSI Model - Layers of OSI Model.

UNIT II – TRANSMISSION MEDIUM **14 Hours**

Parallel and Serial Transmission – DTE-DCE Interface - Modems - Guided Media - Unguided Media - Types of Error - Error Detection - Error Corrections.

UNIT III – MULTIPLEXING AND SWITCHING **16 Hours**

Multiplexing - Types of Multiplexing - Multiplexing Application - Telephone system - Project 802 - Ethernet - Token Bus - Token Ring - Circuit Switching - Packet Switching - Message switching - Connection Oriented and Connectionless services.

UNIT IV – ISDN AND X.25 LAYER **14 Hours**

History of Analog and Digital Network- Access to ISDN - ISDN Layers - Broadband ISDN - X.25 Layers.

UNIT V – NETWORING DEVICES **15 Hours**

Repeaters - Bridges - Routers - Gateway - Routing algorithms - TCP/IP Network and Transport layer - World Wide Web.

Distribution of Marks: Theory 80% and Applications: 20%

TEXT BOOKS

S.No	Authors	Title	Publishers	Year of publication
1	Behrouz a. Forouzan	Data Communications and Networking	TMH	2011

REFERENCE BOOK

S.no	Authors	Title	Publishers	Year of Publication
1	Andrew Tanenbaum	Computer Networks	Tata McGraw Hill	2013
2	Jean Warland	Communication Networks(A first Course) - Second Edition	WCB/McGraw Hill	2006
3.	William Stallings	Data and Computer Communications	Pearson Education	2012
4.	James F. Kurose, Keith W. Ross	Computer Networking	Pearson Education	2010
5.	Bruce S. Davie, Larry L. Peterson	Computer Networks: A Systems approach	Tata McGraw Hill	2010
6.	Moussavi	Data Communication and Networking	Cengage Learning	2014
7.	Tomasi, Wayne	Introduction to Data Communication And Networking	Pearson Education	2013
8.	Leon Garcia	Communication Networks	Tata McGraw Hill	2011

WEB RESOURCES

1. https://www.tutorialspoint.com/data_communication_computer_network/index.html
2. https://www.guru99.com/data-communication-computer-network-tutorial.html

TEACHING METHODOLOGY

- Class room teaching.
- Group discussions
- Seminars
- Demo using systems
- Chart/Assignment
- Simulation Model
- Smart Class room

SYLLABUS DESIGNER

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