1. DATA COMMUNICATIONS NETWORKING

Semester	Subject Code	Category	Lecture Hrs		Theory Hrs		Practical		Credits
			Per week	Per Sem	Per week	Per Sem	Per week	Per Sem	
V		Elective - I	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

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	PO 1	PO 2	PO3	PO4	PO5	PO 6
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***

SYLLABUS

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

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 Hrs**

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 Hrs**

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 Hrs**

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

UNIT V – NETWORING DEVICES **15 Hrs**

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	1999

REFERENCE BOOK

S.no	Authors	Title	Publishers	Year of publication
1	Andrew Tanenbaum	Computer Networks	Tata McGraw Hill	2000
2	Jean Warland	Communication Networks(A first Course) – Second Edition	WCB/McGraw Hill	1998
3.	William Stallings	Data and Computer Communications	Pearson Education	2007
4.	James F. Kurose, Keith W. Ross	Computer Networking	Pearson Education	2008
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	2009
8.	Leon Garcia	Communication Networks	Tata McGraw Hill	2008

WEB RESOURCES

1. https://www.tutorialspoint.com/data_communication_computer_network/ind ex.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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3. Dr. R.HEMSAVENI, Assistant Professor, Department of Computer Science