1. 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		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	PO 2	PO 3	PO 4	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% EXT 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

SYLLABUS DESIGNER

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