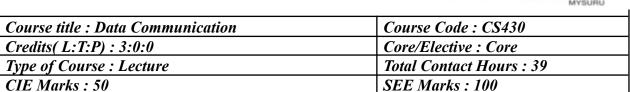
JSS Mahavidyapeetha JSS Science And Technology University





Course Outcomes: After completing this course, students should be able to:

CO1:	Understanding the importance of physical and data link layers of OSI model.
CO2:	Analyze and evaluate network topologies and protocols.
CO3:	Implementing different communication protocols.
CO4:	Exploring fundamental issues driving network design.

Unit	Course Content	No. of
No.		Hours
1	Introduction: Data Communications, Networks, Network Types, Standards	07
	and Administration, Networks Models: Protocol Layering, TCP/IP Protocol	
	suite, The OSI model.	00
2	Introduction to Physical Layer-1: Data and Signals, Digital Signals,	08
	Transmission Impairment, Data Rate Limits, Performance.	
	Digital Transmission: Digital to Digital Conversion (Only Line coding: Polar,	
	Bipolar and Manchester coding), Analog to Digital conversion (only PCM),	
	Transmission Modes.	
3	Bandwidth Utilization: Multiplexing, Transmission Media: Guided Media,	08
	Unguided Media, and Switching: Introduction, Circuit Switched Networks	
	and Packet switching, Structure of a Switch.	
4	Error Detection and Correction: Introduction, Block Coding, Cyclic Codes:	08
	Cyclic Redundancy Checksum, Forward Error Correction: Hamming distance,	
	XOR. Network Layer: Network Layer Performance, IPV4-Addresses	
5	Data link Layer: Introduction to Data-Link Layer: Introduction,	08
	Link-Layer Addressing, Data link Services: DLC services, Data link layer	
	protocols, Point to Point protocol (Framing, Transition phases only). Media	
	Access control: Random Access, Controlled Access.	

Text books:

1. Behrouz A. Forouzan, Data Communications and Networking 5E, 5th Edition, Tata McGraw-Hill, 2013.

Reference Books:

- 1. William Stallings: Data and Computer Communication, 10th Edition, Pearson Education, 2014.
- 2. Alberto Leon-Garcia and Indra Widjaja: Communication Networks Fundamental Concepts and Key architectures, 2nd Edition Tata McGraw-Hill, Reprint 2017.
- 3. Larry L. Peterson and Bruce S. Davie: Computer Networks A Systems Approach, 5th Edition, Elsevier, 2012.

Web Resources:

- 1. https://nptel.ac.in/downloads/106105080/
- 2. https://nptel.ac.in/courses/106105183/
- 3. https://nptel.ac.in/courses/106105081/