



GUJARAT UNIVERSITY

BCA V SYLLABUS

COURSE TITLE			CC303 Computer Networks
COURSE CODE			CC-303
COURSE CREDIT			3
Session Per Week			4
Total Teaching Hours			40 HOURS
AIM			To provide knowledge of Software Project Management.
LEARNING OUTCOMES			On the completion of the course students will be able to : • To become familiar with the fundamentals of data communication and networking. • To understand different network technologies. • To get insights into different advanced network technologies that can be used to connect different networks.
DETAIL SYLLABUS			
UNIT	TOPIC / SUB TOPIC	TEACHING HOURS	
1	❖ Introduction to Data communications and Networking	10	
	❖ Introduction ➤ Fundamental concepts ➤ Data communications ➤ Protocols ➤ Standards ➤ Signal propagation ➤ Analog and digital signals ➤ Bandwidth of a signal and a medium	3	
	❖ Analog and Digital transmission ➤ Introduction ➤ Analog signal, Analog transmission ➤ Digital signal, Digital transmission ➤ Digital signal, Analog transmission ➤ Baud rate and bits per second ➤ Analog signal, Digital transmission (excluding: Adaptive and Delta modulation)	4	
	❖ Modes of data transmission ➤ Introduction ➤ Parallel and Serial communication	3	

	➤ Asynchronous, Synchronous communication ➤ Simplex, half duplex and full-duplex communication	
2	❖ Multiplexing and Demultiplexing	10
	➤ Multiplexing and Demultiplexing ➤ Types of multiplexing ➤ FDM versus TDM ➤ WDM	5
	❖ Transmission errors: Detection and correction ➤ Introduction ➤ Error classification ➤ Types of Error ➤ Error Detection (Checksum, VRC, LRC, CRC) ➤ Recovery from errors	5
3	❖ Transmission Media	10
	➤ Introduction ➤ Guided media ▪ Twisted pair ▪ Coaxial cable ▪ Optical fiber ➤ Unguided media ▪ Microwave ▪ Satellite communication ▪ Cellular telephones	5
	❖ Network topologies and Switching ➤ Introduction ➤ Topologies ▪ Mesh ▪ Star ▪ Tree ▪ Ring ▪ Bus ▪ Hybrid ➤ Basics of switching ➤ Types of switching ▪ Circuit ▪ Packet ▪ Message	5
4	❖ Network protocols, OSI, TCP/IP model	10

	❖ Introduction ➤ Protocols in computer communications ➤ OSI model and layer functions ➤ TCP/IP ▪ Introduction ▪ TCP/IP basics ❖ LAN and WAN ➤ Introduction ➤ LAN ➤ Ethernet ▪ Introduction ▪ Properties of Ethernet ▪ CSMA/CD ➤ Introduction to VLAN, Fast and Gigabit Ethernet ➤ Token ring ▪ Basics of Token ring ➤ FDDI ▪ Introduction ▪ Properties ▪ Operation ▪ Self healing mechanism ➤ Introduction to WAN ❖ Introduction (Note: Overview of this topics should be covered) ➤ ISDN, Architecture, Channel types, interfaces ➤ Bluetooth ➤ Infrared communication ➤ Wireless LAN ➤ Internetworking devices ▪ Repeaters ▪ Bridges ▪ Routers ▪ Gateway	4 4 2
Textbook		
Data Communications and Networks, 2nd Edition Publisher: McGraw Hill By Achyut S Godbole, Atul Kahate		
REFERENCE BOOKS:		
1. Business data communication Publisher: Cengage publications By Selly Cashman 2. Data communications and networking Publisher: McGraw Hill By Behrouz Forouzan 3. Computer networks Publisher: Pearson By Andrew S. Tanenbaum		