Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Internal	Final Exam	Total
MCA-203	Computer Networks	PCC	4	4	0	0	40	60	100

Course Outcomes

At the end of the course the student will be able to	
CO1	Understand the basic taxonomy and terminology of the computer networking model and architecture.
CO2	Articulate the fundamentals concepts of data communication and protocols.
CO3	Understand the network design and performance issues.
CO4	Understand the Importance and Applications of Internet Protocols
CO5	Explore the basic knowledge of cryptography and network security.

Detailed Syllabus

Section-A

UNIT–I: Fundamentals of Communication: Fundamentals of Communication, Modulation, Data Encoding, OSI reference model, TCP/IP model, network standardization, Inter-networking. Physical layer, Switching Technique, Transmission media, Co-axial, Twisted Pair and Fiber Optic Cables, Transmission Impairments, Electromagnetic Spectrum, Radio waves, Microwaves, Satellites, Wireless Mobile Telecommunications Technology.

(10Hrs)

UNIT–2: Data Transmission and Media access Methods: Data Link layer, Design issues, Frame, Error detection and correction, Flow Control, Elementary Data link protocols, Character-oriented and Bit-oriented Protocols, Sliding window protocols, Channel allocation methods, TDM, FDM, ALOHA, Carrier sense Multiple access protocols, Collision free protocols, IEEE standard 802 for LANS, Ethernet, Token Bus, Token ring.

(10Hrs)

UNIT–3: Network Establishment Concepts: Network Layer, Store and Forward Packet Switching, Connectionless and Connection-oriented services, Virtual Circuit, Routing Algorithms, Shortest path, Flooding, Link State, Distant vector, Hierarchical, Broadcast and Multicast Routing. OSPF, BGP, Congestion, Congestion control algorithms.

(10Hrs)

Section-B

UNIT–4: Internet Protocols : TCP/TP Protocol, IP Addresses, Classes of IP Addresses, Subnets, IPv6, Network layer in the Internet, Internet Control, Protocols, ARP, RARP, BOOTP, DHCP, Transport Layer, Protocol Stack, TCP and UDP, Transport Services Primitives, Sockets, Socket Programming concept.

(10Hrs)

UNIT–5: Network Application and Network Security : Application layer, Name service (DNS), Domain Hierarchy, Name servers, Name resolutions, Traditional applications, Telnet, FTP, SMTP, MIME, World wide web-HTTP, HTTP Methods, Cryptographic Algorithms, DES, AES, RSA, Key exchange methods, Authentication Protocol, Digital Signatures.

(10Hrs)

Textbooks

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	Computer Networks: A System Approach	W. Stallings	Pearson Education	2nd (2010)
2	Computer Networks: A System Approach	L. L. Peterson	Morgan Kauffman	5th (2011)

Reference Books

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	Computer Networking: A Top-Down Approach Featuring the Internet	Kurose & Ross	Pearson Education	3rd (2005)