

Branch Name:	MCA
Program Code:	CS201
Course Name:	COMPUTER NETWORKS
Course Code:	4CS2010208T
Pre-requisite Course:	A strong understanding of bits bytes and characters, and information of how computers lay out data in memory

Course Objective:

1. Introduces students to computer networks and focuses on firm foundation for understanding Data Communications.
2. To understand the basis around the OSI Reference Model, TCP/IP model and interactions between them.
3. Provides the students with fundamental knowledge of the various aspects of computer networking and enables students to realize recent developments in the area.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	-	-	4	60	40	-	-	100

Course Contents			
Unit No	Topic	Total Hours	Weightage (%)
1	Introduction to Computer Networks Uses of computer network, Network hardware – LAN, MAN, WAN. Connection oriented and connectionless services, OSI model, TCP/IP model, and Comparison of OSI and TCP/IP model.	12	25
2	The Physical Layer Guided Media - Twisted Pair, coaxial cable, Fiber optics. Unguided transmission media - Radio wave, microwave and infrared, Multiplexing and De-multiplexing– FDM, TDM, WDM. Switching – Circuit switching, Packet switching.	12	25
3	The Data Link Layer and Network Layer The Data Link Layer Design Issues - Framing, Error control, Flow control, Error Detection and correction. The Network Layer: Introduction, Duties of Network Layer, Connection Oriented Forwarding using Virtual Circuits, Connection Less Forwarding using Datagram, Routing Algorithms.	12	25

4	The Transport Layer and The Application Layer The Transport Layer Introduction, Duties of Transport Layer Connection Management at Transport Layer, Congestion Control, Comparison with Data Link Layer The Application Layer Introduction, Domain Name System: Name Space, Registration Process, Name Servers, Resource Records, Types of Resource Records, Dynamic DNS, overview of Electronic mail, and HTTP, Bluetooth	12	25
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Text Books:

1. Computer Network- Andrew S. Tanenbaum, Fifth edition, Pearson.
2. William Stallings. Network Security Essentials By Applications and Standards; 4th ed.; Pearson

References Books:

1. Computer Networks- Bhushan H Trivedi ,Oxford University Press.
2. Data Communications and Networking- Behrouz A. Forouzan, Tata McGraw-Hill, Fifth Edition.
3. William Stallings. Cryptography and Network Security- Principles and Practice; 7th ed.;Pearson.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	To understand the Factors influencing computer network development and the reasons for having a variety of different types of networks.	2 Understanding 3 Applying
CLO2	To understand the Internet structure and Computer Network Architecture	2 Understanding
CLO3	To understand how standard problems are solved in Computer Networking.	2 Understanding, 2 Evaluating
CLO4	Knowing about Computer Networks, Network Types, Protocol Suite and the basic components of a Network system.	2 Understanding
CLO5	Knowing and Applying pieces of hardware and software to make networks more efficient, secure and easier to use	2 Understanding 3 Applying
CLO6	To understand the learners to computer network security	2 Understanding

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes(POs)												Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2
CLO1		L	L	M	M	L	H		M	M			M	L
CLO2	M	L	M		M	L	M	L		L	M		M	M
CLO3	M	M		M	M		M	L	M	M	L		H	M
CLO4	M			H	M	L	H	L		M	M	M	H	M
CLO5	L	M	L	L		H	M		L		M		M	M
CLO6	L	M	M			M		M		L	M		M	M

H:High, M:Medium, L:Low