SCHEME OF COURSE WORK

Course Details:

Course Title	**: Computer Networks**		
Course Code	**: 13CT1124**	**L T P C**	**: 4 0 0 3**
Program:	**: B.Tech.**		
Specialization:	**: Information Technology**		
Semester	**: VI**		
Prerequisites	**: Data Communications**		
Courses to which it is a prerequisite	**: UNIX network programming,Ad-hoc networks, Information Security**		

Course Outcomes (COs):

At the end of the course the student will be able to

1. Understand the Network Models and Physical Layer.
2. Understand the data link layer and medium access sub layer.
3. Understand the Network Layer and Congestion Control.
4. Understand the Transport Layer.
5. Understand the concepts and their implementation in Application Layer.

Course Outcome Versus **Program Outcomes:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1	**M**	**S**		**S**	**M**				**M**		**S**	M
CO-2		**M**			**M**							M
CO-3	**M**	**S**	**M**	**M**	**M**				**M**		**M**	M
CO-4		**M**		**S**	**M**							M
CO-5	**M**	**M**	**M**	**M**	**M**				**M**		**S**	M

S - Strongly correlated, *M - Moderately* correlated, *Blank - No correlation*

Assessment Methods: Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam

Teaching-Learning and Evaluation

Week	Topic/Content	Course outcomes	Sample questions	Teaching learning Strategy	Assessment Methods
1	NETWORK MODELS: Layered Tasks, WAN, LAN, MAN, OSI model, TCP/ IP protocol stack,	CO1	1. Explain how to classify the networks according to their scales. 2. Differentiate	1.lecture	1.assignment-1 2.quiz-1 3.mid-1

			OSI&TCP/IP layer models.		
2	addressing , Novell Networks Arpanet, Internet. PHYSICAL LAYER: Transmission media: copper, twisted pair,	CO1	1. Describe different types of addressing in computer networks. 2. Explain different types of transmission medias in wired networks.	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
3	wireless; switching and encoding asynchronous communications; Narrow band ISDN, broad band ISDN	CO1	1.Explain circuit switching ,packet switching and message switching. 2. what are the Differences between B-ISDN and N-ISDN?	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
4	ATM and **DATA LINK LAYER**: Design issues, framing, Error detection and correction, CRC	CO1,CO2	1. What are the framing techniques explain with examples? 3. What are the different CRC polynomials? Explain any one with example.	1.lecture 2.Calculation of CRC for different messages with different polynomials.	1.assignment-1 2.quiz-1 3.mid-1
5	Elementary data link protocols, Sliding Window Protocol, Slip, HDLC,	CO2	1.What are the different types of sliding window protocols? Explain briefly.	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
6	Internet, and ATM **MEDIUM ACCESS SUB**	CO2	1.Explain role of data link layer in internet and ATM.	1.lecture	1.assignment-1

	LAYER: Random access, Controlled access, Channelization,		2.Explain the different types of Random access control protocols.		2.quiz-1 3.mid-1
7	IEEE 802.X Standards, Ethernet, wireless LANS, Bridges.	CO2	**1.**Describe different types ofspanning tree bridges. 2.explain architecture of wireless LAN frame structure	1.lecture 2.writing scripts	1.assignment-1 2.quiz-1 3.mid-1
8	NETWORK LAYER: Network Layer Design Issues, Routing Algorithms,	CO3	**1.**Explain store and forward packet switching. 2. Describe DVR routing with example	1.lecture 2. Creation of routing tables for sample networks.	1.assignment-1 2.quiz-1 3.mid-1
9	Internetworking, Network Layer in Internet	CO3	1. What is the role of network layer in Internet?.	1.lecture	1.assignment-1 2.quiz-1 3.mid-1
10	**CONGESTION CONTROL:** General Principles, policies, traffic shaping, flow specifications, Congestion control in virtual subnets,	C03	1.Explain general congestion control Principles. 2.What is traffic Shaping? explain what are the techniques to control congestion in networks.	1.lecture	1.assignment-2 2.quiz-2 3.mid-2

11	choke packets, loads shedding, jitter control TRANSPORT LAYER: Transport Services,	CO3,CO4	1.What are the parameters to measure to improvenetwork performance? 2. List the Transport layer services Network	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
12	, Elements of Transport Protocols,Internet Transport Protocols (TCP & UDP);	C04	1.Differentiate TCP and UDP protocols.	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
13	ATM AAL Layer Protocol, **Application Layer:**Network Security,	CO4,CO5	1.Explain DES and RSA algorithms. 2.Describe digital signature scheme.	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
14	Domain name system, SNMP, Electronic Mail	CO5	1.Explain SNMP architecture	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
15	The World WEB, Multi Media.	CO5	1. Explain audio compression techniques.	1.lecture	1.assignment-2 2.quiz-2 3.mid-2
16	Mid-II				
17	END EXAM				