

COMPUTER COMMUNICATIONS AND NETWORKING

Course code:	TE71	Credits:	04
L: P: T: S:	4:0:0:0	CIE Marks:	50
Exam Hours:	03	SEE Marks:	50

Course Objectives

1. To comprehend basic concepts of data transmission in computer networks over OSI model techniques and also protocols over the layers
2. To discuss Various protocols in Noiseless and Noisy Channels.
3. To describe and analyses data transmission over Physical Layer Data link layer, Network Layer and Transport layer
4. To describe various IEEE Ethernet standards.
5. To define and describe IPv4 and IPv6 address allocations and Domain Name space in the Internet.

Course Outcomes :After completion of the course, the graduates will be able to

- CO1 To acquire the knowledge on fundamentals of network technologies, network topologies, architectures, and protocols.
- CO2 To analyze the layered architecture and the networking protocols on each layers.
- CO3 To design skills of modelling various network components with an understanding of their performance from application perspective.
- CO4 To investigate the networking problems on generating block of IP addresses.
- CO5 To evaluate and acquire skills of handling interoperability among network standard.
- CO6 To test the data transmission over various protocols in TCP/IP suite.

Mapping of Course outcomes to Program outcomes

	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PS0	PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	1	2	1	2									1		3
CO2	2	2	3	2									1		3
CO3	2	2	2	2									1		3
CO4	2	2	2	3									1		3
CO5	1	1	1	3									1		3
CO6	1	1	1	3									1		3

Course Content

Module	Contents	Hours	CO's
1	Introduction: Data Communications, Networks, Protocols and Standards ,The OSI Model:	10	CO1

	LayeredTasks,OSImodel,LayersinOSImodel,TCP/IPSuite,Addressing.		
2	Data Link Control: Framing,Flow&Errorcontrol,Protocols,Noiselesschannels&Noisychannels,HDLC. MultipleAccesses:Randomaccess,Controlledaccess,channelization	10	CO2
3	Wired LAN : IEEEstandards,standardEthernet,changesinthestandards,FastEthernet,GigabitEthernet,WirelessLAN :IEEE802.11, BLUETOOTH	10	CO3
4	Networklayer:Logicaladdressing,IPv4addresses,IPv6addresses, Internet Protocol: Internet Working,IPv4, IPv6, IPv4andIPv6transitionfromIPv4toIPv6, UnicastRoutingprotocols,MulticastRoutingprotocols	10	CO4 CO5
5	Transportlayer: processtoprocessdelivery,UDP,TCP, SCTP, Application Layer :Domainnamesystem,Resolution, FTP, rlogin, Telnet.	10	CO6

Self-Study Component	
Module-1	Topologies ,Data Transmission Over Layers
Module-2	Throughput of Aloha, Slotted Aloha,CSMA and its maximum throughput proof
Module-3	ZigBee
Module-4	Forwarding Techniques and Algorithms.
Module-5	DNS in the Internet
Note :No questions from illustrative examples and from Self-study component	

Text Books	
1.	“DataCommunication&Networking”, B Forouzan,TMH 4th Edition, 2006
References	
1.	“ComputerNetworks”, James F. Kursoe, Keith W. Ross, 2nd Edition , 2003, Pearson.
2.	“IntroductiontoDatacommunication&Networking” ,Wayne Tomasi,Pearson 2007.

Assessment Pattern :				
CIE : Continious Internal Evaluation Theory (50 Marks)				
Bloom’s Category	Tests	Assignments	AAT1	AAT2
Marks (Out of 50)	30	10	05	05
Remember				
Understand	5	2	1	1
Apply	10	2	1	1
Analyze	5	2	1	1
Evaluate	10	2	1	1
Create		2	1	1
*AAT: Alternate Assessment Tool				

SEE –Semester End Examination Theory (50 Marks)	
Bloom's Category	Marks Theory (50)
Remember	5
Understand	5
Apply	10
Analyze	10
Evaluate	10
Create	10