



C.U.SHAH UNIVERSITY – Wadhwan City

FACULTY OF: -Technology and Engineering (Diploma Engineering)

DEPARTMENT OF: -Computer Engineering

SEMESTER: - IV **CODE:** - 2TE04CNN1

NAME– Data Communication and Networks

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme							
		Th	Tu	Pr	Total	Theory				Practical (Marks)			Total
						Sessional Exam		University Exam		Internal		University	
						Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
<u>2TE04CNN1</u>	Data Communication and Networks	04	00	02	06	30	1.5	70	03	30	20	----	150

Objectives:-

Computer Networks is the future of computer technology. It is the base through which global connectivity can be achieved. This course is aimed towards teaching basics of computer networks and provides knowledge about hardware and software requirements of computer networks.

Prerequisites: Basic Computer Skills, Basic overall idea about Computer Hardware, Basic fundamental of new network devices.

Course Outlines:-

Sr. No.	Course Contents	Hours
1.	Basic of Computer Network Structure of Data Communication ,Definition and History, Usage of Computer Networks, Standard Organizations and Protocols (IEEE,ANSI,ISO,ITU,CCITT,ISOC,IETF)Line Configuration, Category of Network.(Based on Scope and Base on Connection),Internet,Intranet.	08
2.	Network Topology and Server Bus Topology, RingTopology, Star Topology, MeshTopology, TreeTopology, Different Types of Server(Print Server, File Server, Proxy Server, Web Server).	05
3.	The Reference Model OSI Reference Model And Function of Each Layer, TCP/IP Model, Connection Oriented And Connectionless Approach, Comparison OSI and TCP/IP.	08
4.	Transmission Media Types of Transmission Media, Guided Transmission Media(Twisted pair, Coaxial Cable, FiberOpticCable)UnGuidedTransmissionMedia(RadioWave, Microwave, Infrared, Electromagnetic)	

	gnetic Spectrum,Satellite Communication.	08
5.	Network Devices Use of Network Devices,NIC(Network Interface Card),Repeater,Hub,Switch,Routers, Access Point,Gateways,Bridges,Network Management Software.	08
6.	IP Protocol and Network Application IP Protocol,IPv4,IPv6, Classification Of IP Address, Subnet Masking.	06
7.	Domain Name System Domain Name System (DNS), Types Of Domain Name (Country Domain, Generic Domain, Inverse Domain), Email and their Protocol.	08

List of Experiments:-

- Install & Test Network Interface Card.
- Prepare and Test Straight UTP Cable.
- Prepare and Test Cross UTP Cable.
- Develop a Small Network Using Different Topology.
- Install And Configure File Server.
- Install And Configure Print Server.
- Install and Configure Proxy Server.
- Install and Configure Web Server.
- Install and Test Different Network Device(Router,Hub,and Switch).
- Install and Test Internet.
- Identify Different Network Component in Server Room.

Learning Outcomes:-

- Various Protocol,Topology and models in Networks.
- Analyze Simple Computer Networks.
- Identify Network Problems.

Books Recommended:-

- Data Communication and Networking **by BeharouzaFourouzan**.(The McGraw Hill Companies)
- Computer Networks **by BhushanTrivedi**(Oxford University Press,2013)
- Computer Networks **S Tannebaum by Andrew & David J Wetherall**.(Pearson 2012)
- Data and Computer Communication **by Williams Stallings**(PHI Publication).

E- References:-

- <http://nptel.iitm.ac.in/courses.php?disciplineId=106>
- <http://www.edrasoft.com>
- http://www.tutorialspoint.com/computer_fundamentals/computer_networking.htm
- <http://www.mof.gov.bt/publication/files/pub9ew3702mv.pdf>
- <http://www.lantronix.com/resources/net-tutor-etntba.html>
- <http://www.ccs.neu.edu/home/noubir/Courses/CS4700-5700/S12/slides/lecture1.pdf>
- http://www.cse.iitb.ac.in/~csea/workshops/prabhat07/slides/networking_intro.pdf