C. U. SHAH UNIVERSITY, WADHWAN CITY.

Faculty of: **Computer Science**
Course: **Bachelor of Science Information Technology**
Semester**: II**
Subject Code**: MDC202-1C**
Subject Name: **COMPUTER NETWORKS**

Sr. No	Category	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								
									Theory				Practical				Total
									Continuous and Comprehensive Evaluation		End Semester Exams		Internal Assessment		End Semester Exams		
				Th	Tu	Pr			Marks	Marks	Marks	Duration	Marks	Duration	Marks	Duration	
4	MDC	MDC202-1C	COMPUTER NETWORKS	4	--	--	4	4	20 20 10	Assignment MCQ Attendance	50	2	--	--	-	-	100

AIM: To enable the student to learn about creating network structure and design of network

COURSE CONTENTS

Unit I Introduction to Network **(12 Lectures)**

- Network concepts, Use of network
- Types of network: LAN, MAN, WAN, Wireless Network
- Network model: Peer – to – Peer, Client – Server
- Network Services: File service, Print service, Comm. service, Database service, Security service, Application service
- Network Access Methods: CSMA / CD, CSMA / CA, Token passing, Polling
- Network Topologies: Bus, Ring, Star, Mesh, Tree, Hybrid
- Communication Methods: Unicasting, Multicasting, Broadcasting

Unit II Transmission Media and OSI Model **(12 Lectures)**

- Guided media: Co – axial cable, Twisted pair cable(STP & UTP), Fiber optic cable
- Unguided media: Infrared, Bluetooth, Radio Waves, Microwaves, Wi-fi
- OSI reference model
- TCP/IP network model

Unit III Multiplexing & Switching Concepts **(10 Lectures)**

- Multiplexing & De-multiplexing
- Multiplexing Types: FDM, TDM, CDM, WDM
- Switching Technique: Circuit Switching, Message Switching, Packet Switching

Unit IV Network devices **(11 Lectures)**

- Layer 1 devices: LAN card, Modem, DSL & ADSL, Hub (Active, Passive, Smart hub), Repeater
- Layer 2 devices: Switch (Manageable, non-manageable), Bridge
- Layer 3 devices: Router, Layer 3 Switch, Brouter, Gateway, Network Printer
- Wireless Network device: Wireless switch, Wireless router, Access point

Arrangement of lectures duration and practical session as per defined credit numbers:

Units	Lecture Duration (In Hrs.)		Calculation of Credits (In Numbers)		Total Lecture Duration	Credit Calculation
	Theory	Practical	Theory	Practical	Theory+ Practical	Theory+ Practical
Unit – 1	12	00	4	0	12	4
Unit – 2	12	00			12	
Unit – 3	10	00			10	
Unit – 4	11	00			11	
TOTAL	45	00	4	0	45	4

Evaluation:

Theory Marks	Practical Marks	Total Marks
100	**00**	**100**

REFERENCE BOOKS:

1. Networking Essential - Glenn Berg Tech. Media
2. Data Communication and Networking - B A Forouzan
3. Computer Networks - Andrew S Tanenbaum
4. Computer Networks: A Systems Approach Book by Bruce S. Davie and Larry L. Peterson
5. TCP/IP Guide, Charles M. Kozierok, Available Online - http://www.tcpipguide.com/
   Request for Comments (RFC) - IETF - http://www.ietf.org/rfc.html

SWAYAM/NPTEL Link: https://nptel.ac.in/courses/106105183