

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

INFORMATION TECHNOLOGY

Subject Name: **ADVANCE COMPUTER NETWORKS**

Sr. No.	Course Contents	Total Hrs
1.	Optical Networking • Introduction to Optical Networking • SONET / SDH Standard • DWDM	02
2.	ATM: The WAN Protocol • Introducing ATM Technology • Introducing Faces of ATM • Explaining the basic concepts of ATM Networking • Exploring the B-ISDN reference model • Explaining the Physical Layer • Explaining the ATM Layer • Explaining the ATM Adaptation Layer • Exploring ATM Physical interface • Choosing an Appropriate ATM Public Service	06
3.	Packet Switching Protocols • Introduction to Packet Switching • Introduction to Virtual Circuit Packet Switching • Introduction to X.25 • Introducing switched multimegabit data service	04
4.	Protocols and Interfaces in Upper Layers of TCP/IP • Introducing TCP/IP suite • Explaining Network Layer Protocols • Explaining Transport Layer Protocol • Explaining Application Layer Protocol	04
5.	Routing in the Internet • Introduction to Intra-domain and inter-domain routings • Unicast Routing Protocols • Multicast Routing Protocols	06
6.	Other Routing Techniques • Introduction to traffic Engineering • IP over ATM • Multiprotocol Label Switching • Storage Area Network	06
7.	Network Management and Services • Introduction to Network Management • Standard Network Management Protocol	04
8.	Traffic Engineering Basics • Introduction to traffic Engineering • Requirement Definition for Traffic Engineering • Traffic Sizing • Traffic Characteristics • Protocols • Time and Delay Consideration • Connectivity	07

	• Availability, Reliability, and Maintainability • Throughput Calculation	
9.	Multimedia over Internet • Introduction to Multimedia Services • Explaining Transmission of Multimedia over the Internet • Explaining IP Multicasting • Explaining VOIP	05
10.	Introduction to the Cisco IOS. • The Cisco Router User Interface • Command Line Interface (CLI) • Router and Switch Administrative Functions • Router Interfaces • Viewing, Saving, and Erasing Configurations	04
11.	IP Routing. • Routing Basics • The IP Routing Process • Configuration IP Routing in Our Network	04
12.	Dynamic Routing Protocols. • Routing Protocol Basics • Routing Information Protocol (RIP) • Interior Gateway Routing Protocol (IGRP) • Verifying Your Configurations	04
13.	Layer 2 Switching. • Before Layer 2 Switching • Switching Services • Spanning Tree Protocol (STP) • LAN Switch-Types	04

Test Books:

1. Advance Computer Network, By Dayanand Ambawade, Dr. Deven shah, Prof. Mahendra Mehra, Wiley India
2. CCNA Intro – Study Guide – Todd Lammle, Sybex

Reference Books:

1. High-Speed Networks and Internets, Performance and Quality of Service, Second Edition, William Stallings, Pearson