

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

COMPUTER ENGINEERING

Subject Name: **ADVANCE COMPUTER NETWORKS**

Sr. No.	Course Contents	Total Hrs
1.	Optical Networking <ul style="list-style-type: none"> • Introduction to Optical Networking • SONET / SDH Standard • DWDM 	02
2.	ATM: The WAN Protocol <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Introducing TCP/IP suite • Explaining Network Layer Protocols • Explaining Transport Layer Protocol • Explaining Application Layer Protocol 	04
5.	Routing in the Internet <ul style="list-style-type: none"> • Introduction to Intra-domain and inter-domain routings • Unicast Routing Protocols • Multicast Routing Protocols 	06
6.	Other Routing Techniques <ul style="list-style-type: none"> • Introduction to traffic Engineering • IP over ATM • Multiprotocol Label Switching • Storage Area Network 	06
7.	Network Management and Services <ul style="list-style-type: none"> • Introduction to Network Management • Standard Network Management Protocol 	04
8.	Traffic Engineering Basics <ul style="list-style-type: none"> • Introduction to traffic Engineering • Requirement Definition for Traffic Engineering • Traffic Sizing • Traffic Characteristics • Protocols • Time and Delay Consideration • Connectivity 	07

	<ul style="list-style-type: none"> • Availability, Reliability, and Maintainability • Throughput Calculation 	
9.	Multimedia over Internet <ul style="list-style-type: none"> • Introduction to Multimedia Services • Explaining Transmission of Multimedia over the Internet • Explaining IP Multicasting • Explaining VOIP 	05
10.	Introduction to the Cisco IOS. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • Routing Basics • The IP Routing Process • Configuration IP Routing in Our Network 	04
12.	Dynamic Routing Protocols. <ul style="list-style-type: none"> • Routing Protocol Basics • Routing Information Protocol (RIP) • Interior Gateway Routing Protocol (IGRP) • Verifying Your Configurations 	04
13.	Layer 2 Switching. <ul style="list-style-type: none"> • 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