



C-DAC & Gujarat Technological University
M.E. Computer Engineering
(Wireless Mobile Computing)
Gandhinagar

Semester: I

Subject Name: Advanced Computer Networks

Subject Code: 2715304

Course Content:

Introduction:

Overview of computer networks, seven-layer architecture, TCP/IP suite of protocols, etc. MAC protocols for high-speed LANS, MANs, and wireless LANs. (For example, FDDI, DQDB, HIPPI, Gigabit Ethernet, Wireless ethernet, etc.) Fast access technologies. (For example, ADSL, Cable Modem, etc.)

IPv6:

Why IPv6, basic protocol, extensions and options, support for QoS, security, etc., neighbor discovery, auto-configuration, routing. Changes to other protocols. Application Programming Interface for IPv6

QoS in Internet

Need for QoS in Internet, QoS in ATM network, QoS mechanisms in IP network, Integrated Service Architecture, Differentiated Service Architecture, Resource Reservation Protocol, Multi Protocol Label Switching.

Mobility in networks:

Mobile IP. Security related issues. IP Multicasting. Multicast routing protocols, address assignments, session discovery, etc. TCP extensions for high-speed networks, transaction-oriented applications. Other new options in TCP Network security at various layers: Secure-HTTP, SSL, ESP, Authentication header, Key distribution protocols. Digital signatures, digital certificates

Text Books:

1. Forouzan, Data Communications and Networking, TMH
2. High Speed Networks and Internet - Performance and quality of service by William Stallings
3. Unix network programming by W. Richard Stevens/Addison Wesley

Reference Book:

1. Advanced Computer Network by Dayanand Ambawade / DreamTech press
2. High Performance TCP/IP Networking: Concepts, issues and solutions: By Mahoob Hassan Raj and Jain High-speed networks: TCP/IP and ATM design principles by William Stallings