

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (I.T.) [Five Year Integrated Course]
B.Sc. (Information Technology)
Semester III

Effective from July 2004

Paper No : 304

L: 4, T:0, P:0 Hrs

Paper Title : Computer Networks

1. Introduction to Networks

Data Communication and Networking – Concepts, Need, Uses and Advantages of Network, Networks in the workplace, Client, Servers and Peers based and Hybrid Networks, Server Types, Network Topologies, IEEE 802 standards, Transmission Media, Network Protocols

2. The OSI Model

Layer Architecture, Introduction to OSI Model, The OSI Model Layer Functions

3. Major Protocol Suits

Review of Protocols, Models and Implementations, Internet Protocols

4. Network Hardware

Cable Types, Considerations, Ethernet Cable types and their Applications, Installing and Configuring Network Cards, Repeaters, Hubs, Switches, Routers, Gateways

5. Network Software

Features of Network Operating Systems, Popular network Operating Systems (Client and Server)

6. Principles of Network Design

Defining Enterprise Network Applications, Application Clients, BackOffice and off-the-self Server Applications, Evaluating Current Network Environment, Assessing Network Services, Analyzing Technical Support Structure, Analyzing the Current Network Management

7. Network Configuration

Reviewing Network Protocols, Understanding Network Drivers, Services, Redirectors, Multiple Transport Stack, Network Binding Interfaces, Installing and Configuring Network Adapters, Protocols (TCP/IP & NetBEUI), Managing Network Bindings, Sharing Files and Printers

8. Network Administration

User Profiles, Folder Security, Account Policies, Trust relationship between Domains, Computer Management, Workstation Management

9. Building Internet and Intranet Infrastructure

Elements of TCP/IP Network, Designing Network and IP Address scheme and Assigning IP Addresses, Routing Issues, Configuring and Testing an NOS

10. Network Security

Various Types of Security, Security with Certificates, Planning a Security Approach, Security Problems and their Consequences, Introduction to Firewalls

Main Reading

1. Networking Complete – 3rd Edition, BPB Publications
2. Mastering Local Area Networks by Christa Anderson & Mark Minasi – BPB

Supplementary Reading

1. MCSE: Networking Essentials Study Guide, Tata McGraw Hill Publications
2. MCSE: Windows 2000 Network Infrastructure Design Study Guide, Tata McGraw Hill Publications
3. Computer Networks by A.S. Tanenbaum, PHI Publications