



STANLEY

COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad)
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CS 355

COMPUTER NETWORKS

UNI T-I

Introduction: Uses of Computer Networks, Network Hardware, Network Software: Reference Models (ISO - OSI, TCP/IP).

Network Layer: Network Layer Design Issues, Routing Algorithms,

Congestion Control
Algorithms, Quality of Service

UNI T-II

Internetworking: Concatenated virtual circuits, connectionless internetworking, tunneling, Internetwork routing, fragmentation.

Network layer in the Internet: IP protocol, IP addresses, Internet control protocols, OSPF, BGP, internet multicasting, mobile IP, Ipv6.

Transport Layer: The Transport Service, Elements of Transport Protocols, The Internet Transport Protocols: UDP, Internet Transport Protocols: TCP.

UNIT-III

Network Programming

Socket Interface: Sockets, Socket Address, Elementary Sockets, Advanced Sockets, Socket Options, Asynchronous I/O, Input / Output Multiplexing, Out of Band Data, and Internet Super Server.

Remote Procedure Calls: Introduction, Transparency Issues and Sun RPC.

UNI T-IV

Application Layer:

Domain Name System: DNS Name Space, Resource Records, Name Servers.

Electronic Mail: Architecture and Services, User Agent, Message Formats, Message transfer and Final Delivery.

World Wide Web: Architectural Overview, Static Web Documents, dynamic Web documents, HTTP, Wireless Web.

Multimedia: Digital Audio, Streaming Audio, Voice over IP, Video on Demand.

UNI T-V

Network Security: Cryptography, symmetric key algorithms, Public key Algorithms, Digital Signatures, Management of Public Keys, Communication Security, Authentication protocols, E-mail security, web security.

Suggested Reading:

1. 1. Andrew S. Tanenbaum, “*Computer Networks*”, 4th Edition, Pearson Education.
1. 2. W. Richard Stevens, “*Unix Network Programming*”, Pearson Education 2006.
1. 3. James F. Kurose, Keith W, Ross, “*Computer Networking, Atop-Down Approach Featuring the Internet*”, 2nd Edition, 2003.
1. 4. William Stallings: “*Computer Networking with Internet Protocols and Technology*”, Pearson Education, 2004.