

CORE COURSE III – COMPUTER COMMUNICATION NETWORKS

Unit I

Introduction – Uses of Computer Networks – Network Hardware – Network Software – Reference Models – Example Networks.

Physical Layer – Theoretical Basis for data communication – Guided Transmission media – Wireless Transmission – Communication Satellites – Public Switched Telephone Network – Mobile Telephone System – Cable Television.

Unit II

Data Link Layer – Error Detection and Correction – Elementary Data Link Protocols – Sliding Window Protocol – Example Data Link Protocols.

Medium Access control sub layer – Channel Allocation problem – Multiple Wireless – Blue tooth – Data Link Layer Switching.

Unit III

The Network Layer - Network Layer design issues – Routing Algorithms – Congestion control algorithms – quality of service – Internetworking – Network Layer in the Internet.

Unit IV

The Transport Layer – The Transport Service – Elements of Transport Protocol – Internet Transport Protocols: UDP-TCP. The Application Layer – DNS – Electronic Mail – World Wide Web – Multimedia.

Unit 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 – Social Issues.

Book for Study :

“Computer Networks” Andrew S. Tanenbaum – Fourth Edition, Pearson Education, 2003 / PHI, New Delhi.

Books for reference:

1. “Data Communications and Networking “ Behrouz A Forouzan – Second Edition – TMH.
2. “Data and Computer Communications” – William Stallings – Fifth Edition – PHI, 2000.