Data Communication
Code: IT504B
Contact: 3L + 1T
Credits: 4

Data Communication Fundamentals: Layered Network Architecture; Data and Signal; Guided Transmission Media; Unguided Transmission Media; Transmission Impairments and Channel Capacity; Transmission of Digital Signal; Analog Data to Analog Signal; Digital Data to Analog Signal; Multiplexing of Signals: The telephone system and DSL technology; Cable MODEM and SONET

Data Link control: Interfacing to the media and synchronization; Error Detection and Correction; Flow and Error control; Data Link Control.

Switching Communication Networks: Circuit switching; Packet switching; Routing in packet switched networks; Congestion control in packet switched networks; X.25; Frame Relay; Asynchronous Transfer Mode Switching (ATM).

Broadcast communication networks: Network Topology; Medium Access Control Techniques; IEEE CSMA/CD based LANs; IEEE Ring LANs; High Speed LANs – Token Ring Based; High Speed LANs – CSMA/CD based; Wireless LANs; Bluetooth; Cellular Telephone Networks; Satellite Networks.

Internetworking: Internetworking Devices; Internet Protocols; TCP/IP; Transport and Application layer protocols.
Network Security: Cryptography; Secured Communication; Firewalls.

References:
D. Data Communications and Networking, Behrouz A. Forouzan, TMH
DI. Data and Computer Communications, William Stallings, PHI
DII. Computer Networks, Andrew S. Tanenbaum, PHI