

Syllabus for B.Sc-IT Course

at S.P. College

SEMESTER -- V

COURSE TITLE :- DATA COMMUNICATION COURSE CODE-BIT-502

UNIT-I

Data Communication Concepts: Introduction to Data Communication, Data Communication Model, Data Communication Modes (simplex, Half-Duplex, Full- Duplex)

UNIT-II

Data Communication Media: Guided Transmission Media-Twisted Pair Cable, Coaxial Cable, Optical Fiber Cable (single mode, multimode step index fiber, multimode graded index fiber)
Unguided Transmission Media (Wireless) - Radio Waves, Microwaves, Infrared Waves.

UNIT-III

Characteristics of Signals (Amplitude, Frequency, Period, Wavelength, S/N ratio), Bandwidth & Channel Capacity, Nyquist Law for Noiseless Channel and Shannon's, Law for Noisy Channel, Data Rate V/S Baud Rate.

Data Encoding and Modulation: Difference between modulation and encoding, Digital Data to Digital Signal, Digital Data to Analog Signal, Analog Data to Digital Signal, Analog Data to Analog Signal.

UNIT-IV

Reliable transmission of data : Asynchronous and synchronous , Error detection : Parity-based , Cyclic Redundancy Check (CRC) based , Error Correction by retransmission , Concept of Multiplexing : Frequency division multiplexing(FDM), time division multiplexing(TDM).

Books Recommended:

1. William Stallings – “Data & Computer Communication”.
2. Behrouz A. Forouzan – “Data Communication & Networking”.
3. Andrew Tanenbaum – “ Computer Networks ”.