MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY
BHOPAL - 462003

Name of Program   B. Tech.   **Semester** IV   **Year** II

Name of Course   Data Communication

Course Code   CSE 224

Core / Elective / Other   Core

Prerequisite:
1. Basic Concept of Computer networks
2. Basic Concept of Analog and Digital Signals

Course Outcomes:
On successful completion of the course, student be able to:
1. Identify suitable transmission modes for information transfer.
2. Analyze various modulation techniques used for analog and digital transmission.
3. Analyze spread spectrum technology for wireless communication.
4. Identify various error detection and correction techniques.

Description of Contents in brief:
Characterization of communication signals: Bit rate Baud rate, Sampling, Nyquist bit rate, Shannon Theorem, Bandwidth, Throughput. PCM, Delta Modulation, Serial & parallel transmission, Amplitude modulation, frequency modulation and phase modulation, ASK, BPSK, QPSK, FSK, QAM, Modems. Multiplexing, spread spectrum modulation: Pseudo noise sequences, DS & FH spread spectrum. Synchronous and asynchronous transmission, Line coding scheme, Error detection and correction.

List of Text Books:
1. Data Communication and Networking, B A Forouzan

List of Reference Books:
1. Data & Computer Communication William Stallings
2. Digital Communications, Simon Haykin
3. Principles of Communication Systems, Herbert Taub & D L Schilling

URLs:
1. https://www.cisco.com/c/en_in/solutions/small-business/resource-center/networking.html
2. http://examradar.com/communication-networking-summary-1/
3. Nptel https://nptel.ac.in/courses/106/105/106105082/