

1. Course Outcomes (COs): At the end of the course, students will be able to	
CO1	acquire knowledge about the basics of communication theory.
CO2	apply different modulation schemes for designing the communication network.
CO3	analyze different modulation schemes to design better schemes for different types of channels.
CO4	evaluate and compare different communication topology, modulation schemes, and their performance over various types of channels.
CO5	design robust communication networks based on an advanced modulation scheme.

SYLLABUS FOR MID SEM EXAM SEPTEMBER 2022

- **INTRODUCTION**

History, Concept of Transmitter, Receiver, Channel, Noise, Modulation, Types of Modulation, Different communication systems based on Input and Output. Classification Of Signals, Unit Impulse Signals, Correlation of Signals, Orthogonal Signal Set, Exponential Fourier Series, Types of Noises, Internal: Shot, Thermal, Agitation, Transit Time Noise, and External: Atmospheric, Extra-Terrestrial, Industrial Noise, White Noise, and Filtered Noise, AWGN Properties, Signal to Noise Ratio.

- **AMPLITUDE MODULATION (AM)**

AM, AM Index, Frequency spectrum, Average Power for Sinusoidal AM, Effective Voltage and Current, Non-sinusoidal Modulation, DSBFC & DSBSC Modulation,

- **SINGLE-SIDEBAND (SSB) MODULATION**

SSB Principles,

- **ANGLE MODULATION**

Frequency Modulation (FM), Frequency spectra, Phase Modulations (PM), Sinusoidal PM, Digital PM,

- **PULSE MODULATION**

Pulse Amplitude Modulation, Pulse Position modulation and Pulse Width Modulation.

- **DIGITAL CARRIER SYSTEM**

Introduction and representation of Digital Modulated Signal, ASK, PSK, FSK

Note : All NUMERICALs covered during theory classes.

2. Books Recommended:

1. Dennis Roddy & John Coolen, "Electronic Communications", PHI, 4/E, 1995.
2. George Kennedy, "Electronic Communication Systems", 3/E, McGraw Hill Book Co., 1993.
3. Simon Haykin, "Communication Systems", 2/E, Wiley Eastern Ltd, 1994.
4. Taub and Schilling, "Principles of communication Systems", 3/E, Mc Graw Hill Publication, 1992.
5. B.P.Lathi, "Modern digital and analog communication systems", 4th Ed., Holt, Sounders Pub. 1998.

ADDITIONAL REFERENCE BOOKS

1. Lathi B. P. and Ding Zhi, "Modern Digital and Analog Communication Systems", Oxford University Press, 4th Ed., 2010.
2. Proakis J. and Salehi M., "Fundamental Of Communication Systems", PHI/Pearson Education-LPE, 2nd Ed., 2006.