

PEE7J004

Communication Engineering

3-0-0

**MODUE-I**

**INTRODUCTION:** Elements of an Electrical Communication System, Communication Channels and their Characteristics, Mathematical Models for Communication Channels

**MODULE-II**

**FREQUENCY DOMAIN ANALYSIS OF SIGNALS AND SYSTEMS:** Fourier series, Fourier Transforms, Power and Energy, Sampling and Band limited signals, Band pass signals

**MODULE-III**

**ANALOG SIGNAL TRANSMISSION AND RECEPTION:** Introduction to modulation, Amplitude Modulation (AM), Angle Modulation, Radio and Television broadcasting

**MODULE-IV**

**PULSE MODULATION SYSTEMS:** Pulse amplitude modulation, Pulse Time Modulation .  
**PULSE CODE MODULATION:** PCM system, Intersymbol interference, Eye patterns, Equalization, Companding, Time Division Multiplexing of PCM signals, Line codes, Bandwidth of PCM system, Noise in PCM systems, Delta Modulation (DM), Limitations of DM, Adaptive Delta Modulation, Noise in Delta Modulation, Comparison between PCM and DM, Delta or Differential PCM (DPCM), S-Ary System

**Text Book:**

1. John G.Proakis, M. Salehi, **COMMUNICATION SYSTEMS ENGINEERING**, 2nd ed. New Delhi, India: PHI Learning Private Limited, 2009.; Selected portion from Chapter 1,2 and 3 for module MODULE-I and MODULE-II of the course.
2. R.P Singh and S.D Sapre, **COMMUNICATION SYSTEMS Analog & Digital**, 2nd ed. New Delhi, India: Tata McGraw Hill Education Private Limited, 2009; Selected portions from Chapter 7 and 8 of the book for MODULE-III.

**Reference Book:**

1. Taub, Schilling, Saha, **Taub's Principles of Communication Systems**, TMH.
2. **Modern Digital and Analog Communication Systems**, by B.P. Lathi, Oxford