

DIGITAL COMMUNICATION

Code : EC 601 (EI)

Credits : 4

Module I

Introduction to Pulse Code Modulation, Linear and Non-linear quantization, Calculation of Quantization Errors, Inter symbol Interference, Eye Pattern and Equalization, Delta Modulation.

Quantization Error, Limitations of Delta Modulation - Slope Overload. Adaptive Delta Modulation, Differential PCM, Linear Predictive Encoding.

Module II

Base-band Signal Receivers, Optimum Filtering, Matched Filtering. Coherent Reception Correlation, ASK, PSK, DPSK, FSK, MSK Principles, Error analysis of coherent detection of PSK and FSK signals QPSK, MSK Principles and System

Module III

Time Division Multiplexing - Pulse Stuffing and Word Stuffing, Frequency Division Multiplexing and Concept of Code-Division Multiplexing.

Need for synchronization, Bit Synchronizer, In-phase and Mid-phase Synchronizer, Early late Gate Synchronizer, Frame Synchronization.

Module IV

Fixed Equalizer, Linear Equalizers and Decision Directed Equalizers, Partial Response Signaling.

Block Codes. Definitions, Generator and Parity Check, Matrix Error Control Capacity, Standard Array, Cyclic Codes-Description, Encoding with an $(n-k)$ Stage Shift Registrar and (k) - Stage Shift Register, Syndrome Calculation and Error Detection