Unit I

Chapter 1 : Random Processes & Noise 1-1 to 1-40

Syllabus : Random processes : Introduction, Mathematical definition of a random process, Stationary processes, Mean, Correlation and Covariance function, Ergodic processes, Transmission of a random process through a LTI filter, Power spectral density. **Mathematical representation of Noise :** Some sources of noise, Frequency domain representation of noise, Superposition of noises, Linear filtering of noise, Quadrature components of noise, Representation of noise using orthonormal coordinates.

Unit II

Chapter 2 : Baseband Signal Receiver 2-1 to 2-27

Syllabus : Baseband signal receiver : Probability of error, Optimal receiver design.

Syllabus : Digital modulation : Generation, Reception, Signal space representation and probability of error calculation for Binary Phase Shift Keying (BPSK), Binary Frequency Shift Keying (BFSK), Quadrature Phase Shift Keying (QPSK), M-ary Phase Shift Keying (MPSK).

Syllabus : Generation, Reception, Signal space representation and probability of error calculation for Quadrature Amplitude Shift Keying (QASK), M-ary FSK (MFSK), Minimum Shift Keying (MSK), Comparison of digital modulation systems.

Syllabus : Pulse shaping to reduce Interchannel and Intersymbol interference, Some issues in transmission and reception, Orthogonal Frequency Division Multiplexing (OFDM).

Unit VI

Syllabus : Linear block codes : Coding, Syndrome and error detection, Error detection and correction capability, Standard array and syndrome decoding.

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