Communication Engineering

Syllabus

Section-A

SPECTRAL ANALYSIS :

Fourier Series, Fourier transforms, Convolution Theorem, Correlation, Cross-Correlation and autocorrelation.

Section-B

INFORMATION THEORY :

Introduction to information and entropy, channel capacity for discrete and continuous channels, Shannon's Theorem, Shannon-Hartley Theorem, Noisy channels, coding theory : Shannon-Fano coding, minimum redundance coding, maximization of entropy of a continuous message transmission rate, effect of medium on the information, selection of channels ,effect of noise and its minimization.

Section-C

RANDOM SIGNAL THEORY :

Representation of random signals, concept of probability, probability of joint occurrence, conditional probability, discrete probability theory, continuous random variables, probability distribution function, probability density function, joint probability density functions.

Section-D

RANDOM SIGNAL THEORY :

Statistical average and moments, Ergodic processes,
correlation Function, power spectral density, central limit theory, response of linear system to random signals. Error function
Covariance relation among the spectral densities of the two input-output random processes. Cross spectral densities, optimum filters. Introduction to Linear Block Code abd cyclic Codes