

SECOND YEAR

Information Theory	COE212
Prerequisite : COE204	(2-2-1-0)

Review of probability and random variables. Introduction to information measurement, the types of entropies and channel capacity: Source of information; uncertainty; information & entropy; joint and conditional entropies ; mutual information; discrete memory-less channels; channel model BSC; channel capacity. The techniques of source coding and data compression: Mathematical Model of Information Source; Huffman Coding; Shannon-Fano Codes; Types of Errors. Error control coding (channel coding): Source Of Errors; Information Rate; Galois Field Modem Algebra; Taxonomy Of Codes; Linear Block Codes; Minimum Distance & Correction; Hamming Code BCH Codes; Cyclic Code; Reed-Solomon Code; Convolution Encoder; (Connection Of Convolution, Representation, Code Tree, Trellis Diagram, State Diagram); Maximum Likelihood Decoding; Viterbi Algorithm.