CS/IT 221 PROBABILITY & STATISTICS

Lectures	: 4 periods / week	Internal Assessment	: 40 Marks
		Semester End Examination	: 60 Marks
Semester Exam : 3 hrs		Credits : **4**	

UNIT-I

Probability: Sample space and events, Counting, Probability, The axioms of probability, Some elementary theorems, Conditional probability, Baye's theorem.

Probability Distributions: Random variables, Binomial distribution, Hypergeometric distribution, Mean and Variance of a probability distribution, Chebyshev's theorem, Poisson approximation to the Binomial distribution, Poisson processes.

UNIT-II

Probability Densities: Continuous random variables, Normal Distribution, Normal approximation to the Binomial distribution.

Other probability densities, Exponential, Uniform distribution, Log-normal distribution, Gamma distribution, Beta distribution, Weibull distribution.

Joint Distributions- Discrete and Continuous.

UNIT-III

Sampling Distribution: Population and Samples, Sampling distribution of the Mean (σ known) , Sampling distribution of the Mean (σ unknown) , Sampling distribution of Variance.

Inferences Concerning Means: Point estimation, Interval estimation, Tests of hypotheses, Null hypotheses and tests of hypotheses, Hypothesis concerning one mean, Relation between tests and confidence intervals., Operating Characteristic curves, Inferences concerning two means.

UNIT-IV

Inferences concerning Variances: Estimation of variances, Hypotheses concerning one variance, Hypotheses concerning two variances.

Inferences Concerning Proportions: Estimation of proportions, Hypothesis concerning one proportion, Hypothesis concerning several proportions, Analysis of r×c tables.

Text Book:

Probability and Statistics for Engineers , 6th Edition by Richard A. Johnson, (Prentice Hall of India)

Reference Book:

Fundamentals of Mathematical Statistics by S.C.Gupta & V.K.Kapoor, (Sultan Chand & Sons)