

MA-407: MATHEMATICAL STATISTICS-II

Statistical inference. Maximum likelihood estimators. Properties of maximum likelihood estimators. Sufficient statistics. Jointly sufficient statistics. Minimal sufficient statistics. The sampling distribution of a statistic. The chi square distribution. Joint distribution of the sample mean and sample variance. The t distribution. Confidence intervals. Unbiased estimators. Fisher information. Testing simple hypotheses. Uniformly most powerful tests. The t test. The F distribution. Comparing the means of two normal distributions. Tests of goodness of fit. Contingency tables. Equivalence of confidence sets and tests. Kolmogorov-Smirnov tests. The Wilcoxon Signed-ranks test. The Wilcoxon-Mann-Whitney Ranks test.

RECOMMENDED BOOKS:

1. Mood, A.M., Graybill, F.A., Boes, D.C., Introduction to the Theory of Statistics, 2nd edition, McGraw-Hill Book Company New York 1986.
2. Degroot, M. H., Probability and Statistics, 2nd edition, Addison-Wesley Publishing Company, USA 1986.