

Semester IV

Subject Name: Advanced Statistics	Duration: 6 hrs /Cycle
Subject Code: 4PGM3(2015 on)	Credit : 4
<p>Unit I: Statistical Tests: Chi Square Tests- the distribution of certain quadratic forms- a test of equality of several means- Non central χ^2 and Non central F- the analysis of variance- Regression problem- Test of Stochastic independence.</p> <p>Unit II: Nonparametric Methods: Confidence interval for distribution Quantiles- Tolerance limits for distribution- The sign test- Test of Wilcoxon- the equality of two distributions- The Mann-Whitney Wilcoxon test- Distribution under alternative hypothesis- Linear rank statistics.</p> <p>Unit III: Sufficient Statistics: Sufficient Statistics for Parameter- Rao-Blackwell theorem- Completeness and uniqueness- The exponential class of probability- Density function- Functions of parameter- The case of several parameters.</p> <p>Unit IV: Statistical Inference: The Rao-Cramer inequality- The sequential probability ratio test multiple comprehension- Classification- Sufficiency, Completeness and Stochastic independence- Robust independence.</p> <p>Unit V: Normal Distribution Theory: The Multivariate normal distributions- Distributions of certain quadratic forms- Independence of certain quadratic forms.</p>	

Text Book: Introduction to Mathematical Statistics Robert V. Hogg, Alex T. Craig, 4th Edition, Macmillan Publishing Co. Inc(1970).

Chapters: 8, 9, 10, 11, 12.

Reference Books: 1. Statistical Methods by S. P. Gupta Revised Edition 2011, S.Chand Publishing.

2. Fundamentals of Mathematical Statistics by S.C. Gupta, V.K. Kapur, Reprint 2000, Sultan Chand & Sons.