

Value Added Course For Inter Disciplinary Students

Semester	SSTAVAC01 - Statistical Methods For Data Analysis	L	T	P	C

Unit-1

Tests of significance- population and sample; parameter and statistic standard error and sampling distribution of a statistic; Utility of Standard error; Steps involved in any test of significance; Basic concepts; Large sample tests- Tests for mean and difference of means; single proportion and equality of proportions; difference of standard deviations ; testing the correlation coefficient; equality of two correlation coefficients.

Unit-2

Exact tests- Test for mean; equality of means and for paired samples; observed partial and multiple correlation and regression coefficients; test for one population variance and test for equality of two population variances; test for observed sample correlation ratio.

Unit-3

Chi-square test for goodness of fit- contingency tables; test for independence of attributes; Yate's correction for contingency table; Bartlett's test for homogeneity of several population variances; test for homogeneity of several population proportions.

Unit-4

Multiple regressions- interpretation of R^2 ; interpretation of partial regression coefficients; test for linearity of regression; test for intercept in a regression. Application of Multivariate tests- Test for population mean vector (for covariance matrix known and unknown). Test for equality of two population mean vectors when the covariance matrices are equal; (known and unknown) Mahalanobis D^2 test.

Unit-5

Non parametric methods; Advantages and disadvantages over parametric methods. Sign test for medians, Median test for two populations, Wald-Wolfwitz run test, Kruskal-Wallis Rank sum Test (H-Test), Mann-Whitney- Wilcoxon rank sum test, U-test, Kolmogorov – Smirnov, Test for goodness of fit, Test for comparing two populations, Test for randomness, Friedman's test.

Book for Study and Reference :-

1. Ostle. B and Mensing R. W, (1975), Statistics in Research, Third Edition, Oxford & IBH Publishes Co.,
2. Gupta S. C. and V. K. Kapoor, (2007), Fundamentals of Mathematical Statistics, Sultan Chand & Sons.
3. Norma Gilbert, (1981), Statistics, Saunders College publishing.
4. Rajagopalan V., (2006), Selected Statistical Tests, New Age International Publishers (P) Ltd., NewDelhi.
5. Croxton, E. F and Cowden, D. J, (1985), Statistics Practical Business Statistics, Prentice– Hall.
6. Catelcult. R, (1982), Statistics in Research and Development, Chapman and Hall.
7. Medhi. J, (1992), Statistical methods, Wiley Eastern Ltd.