SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Statistics)
Semester: III
Syllabus with Effect from: June-2013

Paper Code: PS03CSTA02	Total Credit: 4
Title Of Paper: Multivariate Analysis	

Unit	Description in Detail	Weightage (%)
I	Multivariate normal distribution (characterization) and its properties. Random sampling from a multivariate normal distribution. Maximum likelihood estimation of parameters, Distribution of the MLEs. Distribution of sample intra-class correlation coefficient in a random sample from a symmetric multivariate normal distribution.. Application in testing and interval estimation.	25%
II	Wishart matrix, its distribution and properties. Distribution of generalized variance. Wilk's lamda distribution. Null and non-null distribution of simple correlation matrix. Null distribution of partial and multiple correlation coefficients. Application in testing and interval estimation.	25%
III	Distribution of Hotelling's T^2 statistic. Application in tests on mean vector for one and more multivariate normal populations and also on equality of the components of mean vector in a multivariate normal population.	25%
IV	Test concerning covariance matrices. Test for identical populations. Multivariate linear regression model, estimation of parameters, tests of linear hypotheses about regression coefficients using LRT. Multivariate analysis of variance(MANOVA) of one and two way classified data.	25%

Basic Text & Reference Books:-

- Anderson,T.W.(1958). Introduction to Multivariate Statistical Analysis, Wiley, NY
- Giri, N C. (1977). Multivariate Statistical Inference. Academic press, NY
- Kshirsagar, A. M. (1972). Multivariate Analysis, Marcel Dekker,NY
- Johnson, R.A. and Wichern, D.W.(1992). Applied Multivariate Statistical Analysis 3rd Ed.,PHI
- Mardia, K.V,Kent, J.T, and Bibby, J.M.(1979). Multivariate Analysis, Academic Press, NY
- Muirhead, R. J. (1982). Aspect of Multivariate Statistical Theory,Wiley, NY
- Rao,C.R.(1973).Linear Statistical Inference and its Applications, 2nd ed. Wiley,NY
- Saber, G.A.F.(1984). Multivariate Observations, Wiley, NY
- Siotani, M., Hayakawa, T., and Fujikoshi, Y.(1985). Modern Multivariate