

Syllabus of S.Y.B.Com (Statistics) Yearly  
VEER NARMAD SOUTH GUJARATA UNI-VERSITY, SURAT  
STATISTICS PAPER – II (PRINCIPAL)  
(IN FORCE FROM JUNE 2015-2016)

- (I) **TIME SERIES ANALYSIS :** **20 %**  
Economics time series, its different components, illustrations. Additive and Multiplicative model. Determination of trend. Analysis of seasonal fluctuations. Construction of seasonal indices.
- (II) **THEORY OF CORRELATION & REGRESSION :** **15%**  
Definition of covariance and correlation coefficient between two variables in terms of mathematical expectation. Effect of change of origin and scale. Properties of correlation coefficient, linear regression. Fitting of regression lines by the method of least squares Derivation and properties. Relationship between correlation coefficient and regression coefficients. Computation of correlation coefficient and regression coefficient from bivariate table.
- (III) **PROBABILITY DISTRIBUTION :** **15%**  
Derivation and important properties of  
(1) Hyper Geometric distribution  
(2) Normal distribution  
(3) Gamma distribution  
(4) Beta first type distribution  
(5) Beta second type distribution
- (IV) **MATHEMATICAL ECONOMICS :** **20%**  
Statistical laws of demand and supply, Price equilibrium. Price elasticity of demand & price elasticity of supply. Profit maximization under monopoly and duopoly. Utility function,  
Cob – Dogglas production function.

**(V) MULTIPLE AND PARTIAL REGRESSION AND CORRELATION : 15 %**

Concept of partial regression and partial correlation. Equation of regression plane. Properties of residual. Coefficient of multiple regression and correlation coefficient for three variables, their computation, derivation of their formula and properties with proof and related results.

**(VI) EXACT SAMPLING DISTRIBUTIONS : 15%**

Derivation of  $\chi^2$ , t and F distributions with their properties and relation between them.

**BOOKS RECOMMENDED :**

- (1) Mathematical Statistics : J. N. Kapur  
H. C. Saxena  
S. Chand & Co. New Delhi.
- (2) Fundamental of Mathematical statistics Sultan chand & sons publishers New Delhi.
- (3) Fundamental of statistics Vol. – II  
Goon A. M. Gupta M. K. & Das Gupta B (1999), world press calcutta
- (4) Statistics (Theory & practice)  
Dr. B .N. Gupta; St. Sahitya Bhawan Agra.
- (5) Business statistics : C. M. Chikkodi  
B. C. Satya prasad  
Himaliya publishing house.
- (6) Managerial Statistics: N. K. Sharma  
Sublime publications. Jaipur.
- (7) Advanced practical statistics S. P. Gupta.  
S. Chand & Company Ltd. New Delhi.
- (8) Statistics theory and pratice  
M. C. shukla; S.S.Gutshan.
- (9) Mathematical Statistics Hogg & Craig.
- (10) Mathematical Economics : J. K. Goyal  
B. K. Saksena  
Goal publishing house Meerut.
- (11) Mathematical Statistics : J. N. Kapur  
H. C. Saxena
- (12) Fundamental of Mathematical statistics sultan chand & sons publishers New Delhi.
- (13) Mathematical Statistics.  
Hogg & Craig.

- (14) Shanti Narayan (1993) Mathematical Analysis S. Chand & Co. New Delhi.
- (15) Goon A. M. Gupta M. K. & Das Gupta B (1999) Fundamental of Statistics world press  
calcutta.
- (16) Degroot M H. (1975) probability and statistics Addison wesley.
- (17) Hoal P. G. Port S. C. and Stone C.t. (1991)  
Introduction to probabilty theory universal book store.