

# **VEER NARMAD SOUTH GUJARAT UNIVERSITY**

University Campus, Udhna-Magdalla Road,  
SURAT – 395 007.

---

## **M.Com. ( Part-I ) Statistics**

**Effective From: 2005-06**

<b>Paper No.</b>	<b>Title of the paper</b>
Paper- I	Advanced Statistics
Paper II	Advanced Statistics
Paper III	Advanced Statistics

## **M.Com. (Part-II) Statistics**

<b>Paper No.</b>	<b>Title of the paper</b>
Paper- IV	Advanced Statistics
Paper V	Advanced Statistics
Paper VI	Advanced Statistics

# VEER NARMAD SOUTH GUJARAT UNIVERSITY

University Campus, Udhna-Magdalla Road,  
SURAT – 395 007.

---

## M.Com. (Part- I) Statistics

### ADVANCED STATISTICS PAPER I

**(1) Statistical Inference: (50%)**

**(i) Estimation:**

Estimator, Different measures of closeness of an Estimator, some properties of estimators: consistency, unbiasedness and efficiency. Methods of estimation: Maximum likelihood estimator and it's properties (without proof), Method of maximum likelihood, method of moments, method of chi-squares, Confidence intervals, methods of finding confidence intervals, large sample confidence intervals, confidence intervals for parameters elementary distributions.

**(ii) Testing of Hypotheses:**

Statistical hypotheses, critical region, two types of errors, level of significance, power of a test, Neyman – Pearson's Lemma (without proof ) and it's applications ( Binomial, Poisson, Normal and Exponential distributions ), The most powerful test of a simple hypothesis against a simple alternative.

**(2) Univariate Distribution:**

Introduction, Important properties and application of (i) Hyper Geometric distribution (ii) Negative Binomial distribution (iii) Cauchy distribution (iv) Laplace distribution (v) Log-Normal distribution. **(25%)**

**(3) Non-Parametric Tests:**

Introduction, comparison of parametric and non-parametric tests, Run test for randomness, Kolmogrov-Smirnov test of goodness of fit, extension of Median test, Kruskal-Wallis test – (one-way analysis of variance), Rank correlation, Kendall's Rank correlation. **(25%)**

**BOOKS :**

- (1) Johnsons, N. L. and Kotz, S. (1977) :Distributions in Statistics, John Wiley.
- (2) Ferguson, T. (1967): Mathematical Statistics; Academic Press.
- (3) Jaiswal, M. C. (1973): Statistical Distributions; Guj. Uni. Book Pub. Board, Ahmedabad.
- (4) Rohatgi, V. K. (1984): Introduction to Probability Theory and Mathematical Statistics; Wiley Eastern.
- (5) Gibbons, J.D. (1976) : Non-Parametric Methods for Quantitative Analysis; Holt, Rinehart and Winston
- (6) Sidney Seigal (1956): Non-Parametric Methods for Behavioural Sciences; Mac-Graw Hills.