Proposed Syllabus of T.Y.B.Com (Statistics) Yearly
VEER NARMAD SOUTH GUJARATA UNI-VERSITY, SURAT
STATISTICS PAPER – III (PRINCIPAL& SUBSIDIARY)
(IN FORCE FROM JUNE 2016-2017)

I. TESTS BASED ON SMALL SAMPLES: 30%

UNIT 1: Tests based on χ^2, t & F distributions : test of population variance, test of goodness of fit, test of independence of attributes, Yate's correction, test of single mean, test of difference between two means (for dependent and independent samples), test of significance of sample correlation coefficient, Confidence limits for mean for small samples

UNIT 2: Fisher's z- transformation and its applications; test of two population variances, Confidence limits for population correlation coefficeints

UNIT 3: Analysis of variance (one way and two way classifications)

II. ELEMENTARY DECISION THEORY: 20%

UNIT 1: Meaning and scope of decision theory, basic elements of a statistical decision problem, decision analysis, payoff matrix, decisions under certainty;

UNIT 2: Decision under uncertainty: Laplace criteria, Maximin criteria, Hurwitz criteria, Minimax regret criteria;

UNIT 3: Decision making under risk: Expected Monetary Value (EMV), Expected Opportunity Loss (EOL), Expected Value of Perfect Information (EVPI);

UNIT 4: Baye's Principle

III. LINEAR PROGRAMMING TECHNIQUES: 30%

UNIT 1: Definition of general linear programming problems (LPP), formulation of LPP, examples of LPP occurring in various fields. Graphical solution of LPP.

UNIT 2: Transportation problem (TP): Balanced and unbalanced T.P, methods for finding initial basic feasible solution (BFS), matrix minima method, Vogel's Approximation Method (VAM) and min(min-max) method, optimality test, MODI method for improving an IBFS, optimal solution.

UNIT 3: Assignment problem (AP), Hungarian method for solving an assignment problem, variations in Assignment problem.

IV. NON-PARAMETRIC TESTS: 20%

UNIT 1: Introduction, comparison of parametric and non-parametric tests

UNIT 2: Sign test for single sample and paired samples.

UNIT 3: Wilcoxon signed-rank test for one sample and paired samples, Mann-Whitney test

UNIT 4: Median test

BOOKS RECOMMENDED:

1. Raiffa H. & Schlaifer R: Applied Statistical Decision Theory, mit Press, 1968.

2. H.A.Taha: Operations Research, Macmillan Publishing Co., 1999.

3. Gass, S.I.: Linear Programming and Applications, McGraw Hill, 1975.

4. Goon A.M.Gupta M.K. & Das Gupta B.: Fundamentals of Statistics; World Press, Calcutta, 1991.

5. Ethance D.N. (1986): Fundamentals of Statistics, Kitab Mahal, Allahabad.

6. Agarwal B.L: Basic Statistics, Wiley Eastern Limited, New Age international limited.

7. Sharma S.D.: Operation Research, Kedar Nath Ram Nath & Co. Meerut.

8. Kapur & Saxena: Mathematical Statistics, S.Chand & Co. New Delhi.

9. S.P. Gupta: Statistical Methods, Sultan Chand & Sons.

10. Anitha H.S.: Operations Research for Management, Mangal Deep Publication, Jaipur.

11. P.K. Gupta and Manmohan: Operations Research & Statistical Analysis, Sultan Chand & Sons publishers, New Delhi.

12. N.P. Agarwal: Operations Research, Indus Valley Publications, Jaipur – New Delhi.

13. C.M.Chikkodi, B.G. Satya Prasad: Business Statistics, Himalaya Publishing House.

14. S.P. Gupta: Advanced Practical Statistics, S.chand & Co, Ltd, New Delhi.