

Subject Code: 1CM1010614

Subject Title: Advanced Statistics-8

Course Objective: To make the students about the various aspects of statistics and its practical application in the corporate sector.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)		
Lecture	Tutorial	Practical	Credit	University Assessment	Institutional Assessment	Total
3	0	0	3	70	30	100

Subject Contents

Sr. No	Topic	Total Hours	Weight (%)
1	Student's t Test: <ul style="list-style-type: none"> Introduction to t-distribution, its probability density function (statement only), assumptions for small sample tests, applications of t-test (both one and two tailed): (1) testing mean of a small sample, (2) comparing means of two samples (independent samples), (3) paired t-test for dependent samples, simple examples based on these tests. 	9	25%
2	Chi-square Test: <ul style="list-style-type: none"> Introduction to chi-square distribution, its probability density function (statement only), applications of chi-square test: (1) testing variance of a small sample, (2) testing independence of attributes using $m \times n$ contingency table, using the formula for 2×2 contingency table with Yate's correction (without proof), (3) testing goodness of fit (Binomial and Poisson distributions only), simple examples based on these tests. 	9	25%
3	Variance Ratio Test and Experimental Design: <ul style="list-style-type: none"> Introduction to F-distribution, its probability density function (statement only), applications of F test: (1) comparing variances of 2 small samples, (2) testing means of several small samples – ANOVA (one way and two way analysis). Concept of design of experiments, principles of design of experiment – randomization, replication and local control, concepts of CRD, RBD and LSD with illustrations 	9	25%
4	Non Parametric Tests: <ul style="list-style-type: none"> Meaning - Importance of NP test, Sign test, Median test, Run test, Mann-Whitney test, Wilcoxon's test, Kruskal-Wallis test, Kolmogorov – Smirnov test (without derivation). Simple examples (table value given), simple examples based on these tests. 	9	25%

Reference Books:

- Goon. Gupta, Dasgupta : "An outline of Statistical Theory" Vol-1 and II. World Press, Calcutta
- Levin and Rubin: "Statistics for Management", Prentice Hall of India Pvt. Ltd. New Delhi.
- Parimal Mukhopadhyay : "Mathematical Statistics" Books & Allied (P) Ltd.
- S.C. Gupta: "Fundamentals of Mathematical Statistics" Sultan Chand & Sons, New Delhi.
- Sancheti & Kapoor : Business Statistics. Sultan Chand & Sons, New Delhi.