Faculty of Commerce
Master of Commerce (Sem-1)
In Effect from Academic Year 2016-17

Subject Code: 1CM2010114	**Subject Title:** MATHEMATICAL STATISTICS -2
Subject Type : SPECIALIZATION	**Course Objective:** To present a clear, simple systematic and comprehensive exposition of the methods, principles and techniques of Statistics in various discipline with special reference to commerce, management, economics and business.

Teaching Scheme (Hours per week)		**Evaluation Scheme (Marks)**		
Lectures	Credit	University Assessment	Institutional Assessment	Total
4	4	60	40	100

Unit	Topic and Contents	Hours	Wt. (%)
1.	**Estimation Theory & Methods of Estimation:** Concept and definition of an estimator and estimate. Unbiadness, efficiency and consistency of estimators. Statement of Cramer - Rao inequality without proof, Minimum variance bound unbiased estimator and its uniqueness Definition of a sufficient statistic and statement of factorization theorem - examples.	15	25%
2.	**Method of moments and maximum likelihood:** Properties of the maximum likelihood estimators without proof. Definition of confidence interval using a pivotal quantity, construction of 95 and 99 percent confidence intervals for the mean, variance, difference of means of normal population using suitable pivotal quantities. Confidence intervals of population and difference of properties.	15	25%
3.	**Testing of Statistical Hypothesis:** Statement of a statistical hypothesis, Simple and composite hypothesis, Two types of errors. Formulation of a non randomized test and critical region and definition of probability of type I & type II errors, Statement of Neyman-Pearson lemma for non-randomised test for testing a simple null against a simple alternative.	15	25%
4.	**Non-parametric tests:** Idea of non-parametric tests. Advantages and disadvantages of non-parametric tests. Sign. Wilcokon, Mann-Whitney, Median, run test for one and two samples.	15	25%

References Books:

1. Rohatgi V.R.(1984) : Introduction to prob. Theory and Mathematical Statistics (Wiley Eastern)
2. Goon, Gupta and Dasgupta(1970) : An outline of Statistical Theory Vol. I & II (World Press, Calcutta)
3. S. C. Gupta and V. K. Kapoor(1990) : Fundamentals of applied Statics (Sultan Chand and Sons)
4. Jaiswal M.C. (1972) : Statistical Distributions, Guj arat University, Ahemdabad
5. Mohse-Beh-Horim and Levy H.(1984) : Statistical Decision and applications in business and Economics, McGraw Hill)
6. Meyer P.L. (1970) : Introduction to Probability and Statistical Applications (Addison - Wesley)
7. Hogg and Craig (78) : Introduction to Mathematical Statistics (Collier - M)
8. Feller W. : Introduction to Prob. Theory And application s Vol Eastern)