

Branch Name:	B.Com
Program Code:	2CM101
Course Name:	Advanced Statistics-8
Course Code:	2CM1010614
Pre-requisite Course:	Advanced knowledge of Statistics.

Course Objectives:

1. To make the students about the various aspects of statistics and its practical application in the corporate sector.
2. To expose students to advanced Statistical concepts.
3. To inculcate an analytical approach to the subject matter.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	--	-	3	70	30	-	-	100

Subject Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	Student's t Test: • 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: • 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: • 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: • Meaning - Importance of NP test, Sign test, Median test, Run test,	9	25%

	MannWhitney test • Wilcoxon's test, Kruskal-Wallis test, Kolmvgorow – Smirnov test (without derivation). Simple examples (table value given)., simple examples based on these tests.		
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Text Books:

1.

Reference Books:

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

List of Open Source Software/learning website:

LAB/Practical

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom'sTaxonomyLevel
CLO1	understand the methods for describing sets of data.	2 Understanding
CLO2	Illustrate the different types of statistical method.	3 Applying
CLO3	Compare about the various statistical method.	4 Analyzing
CLO4	understand the Student's t Test.	2 Understanding
CLO5	Understanding the concepts of Variance Ratio Test and Experimental Design.	2 Understanding
CLO6	To describe Non Parametric Tests statistical method.	1 Remembering

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes (CLOs)	Program Outcomes (POs)							Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CLO1	H		M	H		L	M	M	H
CLO2									
CLO3	H		H	H	L				
CLO4	H		H	H	M			L	M
CLO5	H		H	H			M		
CLO6	M	L	M	M				M	H

H:High, M:Medium, L:Low