Faculty of Commerce
B.Com (Semester - 5)
In Effect from Academic Year 2023-24

Branch Name:	B.Com
Program Code:	2CM101
Course Name:	**Advanced statistics-5**
Course Code:	**2CM1010513**
Pre-requisite Course:	Basic knowledge regarding statistical Techniques.

Course Objectives:

1. To provide in depth knowledge to the students about advanced statistical tools and approaches, that is applicable in various fields.
2. Describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis

Teaching and Examination Scheme:

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

Subject Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	**Demand Analysis & Monopoly & Duopoly Problems:** Demand and supply function, Market equilibrium, effect of taxation and subsidy, marginal and average, revenue & cost function, Discussion of monopoly problems- classical duopoly problems (idea only), Simple examples of monopoly under perfect competition, Difference between monopoly & duopoly problems	9	25%
2	**Network Analysis by CPM/PERT:** Concept CPM and PERT. Differentiation between CPM and PERT. CPM: Definitions of Project, Activity, Event, Completion time of activity, Project completion time, Slack time, Critical Activity, Critical Path, Earliest Start (ES) time, Earliest Finish (EF) time, Latest Start (LS) time, Latest Finish (LF) time, Dummy activity. Construction of Network and its rules. Calculations of ES, LS, EF, LF and project completion time. PERT: Definitions of Optimistic time, Pessimistic time, Most likely time. Calculations of expected completion times of activities and their variances, expected completion time of the project and its variance. Numerical problems on CPM and PERT.	9	25%
3	**Mathematics for Finance:** Types of Interest, Nominal and Effective rates of Interest, Simple, Compound and continuous discounting, Depreciation, simple examples only Various types ofAnnuities, Sinking fund and simple examples related to these topics.	9	25%
4	**Curve Fitting:** Meaning and definition of least square principle, Fitting of linear, quadratic and Exponential curves like (i) $y = ab^x$ (ii) $y = ae^{bx}$ (iii) $y = ax^b$ etc. and simple examplesbased on it.	9	25%

Text Books:

1. S. C. Gupta, V. K. Kapoor, Fundamentals of Applied Statistics, Sultan Chand & sons, New Delhi.

Reference Books:

1. David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, Statistics For Businessand Economics, South- Western Cengage Learning India Pvt. Ltd. New Delhi.
2. J. K. Sharma, Mathematics for Business and Economics, Asian Books Private Ltd.

3. R. G. D. Allen, Mathematical Analysis for Ecomomists, Macmillan, New,York.
4. S. C. Gupta, V. K. Kapoor, Fundamentals of Applied Statistics, Sultan Chand & sons, New Delhi.
5. S.C. Gupta: "Fundamentals of Mathematica Statistics" S. Chand, New Delhi.
6. S.D.Sharma : Operations Research
7. Goel And Mithal : Operations Research

List of Open Source Software/learning website:

1. https://www.youtube.com/watch?v=Yeo_ig96s6I
2. https://www.youtube.com/watch?v=MaW6t9ajE7M

LAB/Practical

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

CLO	Description	Bloom'sTaxonomyLevel
CLO1	Describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis	2 Understanding 1 Remembering
CLO2	Critically evaluate the underlying assumptions of analysis tools	2 Understanding 5 Evaluating
CLO3	Understand and critically discuss the issues surrounding sampling and significance	4 Analyzing 2 Understanding
CLO4	Discuss critically the uses and limitations of statistical analysis	2 Understanding 3 Applying,
CLO5	Solve a range of problems using the techniques covered	2 Understanding 3 Applying
CLO6	Conduct basic statistical analysis of data.	2 Understanding 3 Applying

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		M	H		L		M	L	H
CLO2	H	L		M		H		M	
CLO3		H		M		L			H
CLO4	H	M			M		L		H
CLO5	L		L	H		L			M
CLO6	M	L			H		H	H	

H: High, M: Medium, L: Low