Program: Bachelor of Commerce (Economics)		Semester : II	
Course : Course : Business Statistics **Academic Year: 2023-2024 Batch: 2023-2025**		**Code:**	

Teaching Scheme				Evaluation Scheme	
Lectures	**Practicals**	**Tutorials**	**Credits**	**Internal Continuous Assessment (ICA) (weightage)**	**Term End Examinations (TEE) (weightage)**
30	Nil	Nil	02	20 Marks	30 Marks

Internal Component		
Class Test (Duration 30 Mins)	**Projects / Assignments**	**Class Participation**
10 Marks	**10 Marks**	-

Learning Objectives :

1. To provide an overview to the students with the basic concepts involved in Statistics.

2. To apply the basics of Statistical skills which are imperative in Economics and Management.

3. To take well informed decisions in predictable and uncertain situations.

Learning Outcomes : After completion of the course, students would be able

1. To understand the various issues involved in the collection, analysis and arriving at conclusive Decisions regarding quantitative data.
2. To understand and appreciate the practical relevance of various basic statistical tools in the Field of finance and economics.

Pedagogy:

The objective of the course is to encourage students to learn and appreciate the use of the various tools of

Mathematics and Statistical Techniques with regard to scientific management in businesses. Hence,

1. Adaptive teaching methods.
2. To invoke Computational thinking in problem solving.
3. Classroom session with applications in MS-excel in Tutorial Lecture.
4. Students would be given project/field work for better understanding of the concepts.

Detailed Syllabus: (per session plan)
Session Outline For Business Statistics
Each lecture session would be of one hour duration (30 sessions)

Module	Module Content	Module Wise Pedagogy Used	Module Wise Duration	Module Wise Reference Books
I	**Introduction and Descriptive Statistics:** a. **Introduction:** Meaning, Scope and Limitations of Statistics, Basic Statistical Concepts: Population, Sample, variate, Attributes, Parameter, Statistic. Types of data, Sources of data: Primary and secondary, sample and census survey. b. **Descriptive Statistics :** I) **Measures of Central Tendency:** Definition of Average, Types of Averages: Arithmetic Mean, Combined and Weighted arithmetic mean, median, and Mode for raw data, Ungrouped frequency distribution, grouped frequency distribution. Quartiles, Deciles and Percentiles. II) **Measures of Dispersions:** Concept of dispersion. Absolute and relative measures of dispersion, Range, Quartile Deviation, Mean Deviation, Standard Deviation and corresponding coefficients. Combined Standard deviation.	Classroom sessions with adaptive methods & computational thinking	2+6+7	1.Statistical Methods - S.G. Gupta (S. Chand & Co.) 2. Quantitative Techniques for decision making by Anand Sharma. 3. Business Statistics Using excel and SPSS by Nick Lee and Mike.
II	**Probability & Probability Distributions** **a. Probability Theory** Concept of random experiment/trial and possible outcomes; Sample Space and Discrete Sample Space; Events their types, Algebra of Events, Mutually Exclusive and Exhaustive Events, Complimentary events. i) Classical definition of Probability, Addition theorem (without proof), conditional probability. ii) Independence of Events: $P(A \cap B)=P(A) P(B)$. Simple examples iii) Bayes Theorem a. **Probability Distributions:** i. Discrete Probability Distribution: Binomial, Poisson (Properties and applications only, no derivations are expected)	Classroom sessions with computational thinking	4+5+6	1.Statistics for management by Richard Levin, David S. Rubin, Sanjay Rastogi /Masoos Husain Siddiqui. 2. Operations Research Gupta and Kapoor.

	Continuous Probability distribution: Normal Distribution. (Properties and applications only, no derivations are expected)			

Reference Books:

Title	Author(s)	Publisher
Business Mathematics	D. C. Sancheti and V. K. Kapoor	Sultan Chand & Sons, 2006,
Mathematics for Business Economics:	J. D. Gupta, P. K. Gupta and Man Mohan,	Tata Mc- Graw Hill Publishing Co. Ltd., 1987
Schaum Series STATISTICS	Murray Spiegel, Larry Stephens	Mc Graw Hill
Operations Research	Gupta and Kapoor	S. Chand & Sons Co.
Statistical Methods	S.G. Gupta	S. Chand & Sons Co.
Business Mathematics & Statistics	B Aggarwal	Ane Book Pvt. Limited
Statistics for management	Richard Levin, David S. Rubin, Sanjay Rastogi /Masoos Husain siddiqui.	Pearson
Mathematics & Statistics	Ajay Goel & Alka Goel.	Taxmann's Publication
Quantitative Techniques of Decision Making	Anand Sharma	Himalaya Publishing House
Business Statistics Using Excel & SPSS	Nick Lee & Mike	SAGE
Business mathematics and statistics	V.R.Nikam	(Chandralok Prakashan)

Evaluation Pattern

The performance of the learner will be evaluated for 50 marks in two components. The first component will be a Continuous Assessment with a weightage of 40% of total marks per course. The second component will be a Semester end Examination with a weightage of 60% of the total marks per course. The allocation of marks for the Continuous Assessment and Semester end Examinations is as shown below:

a). Details of Continuous Assessment (CA)
40% of the total marks per course:

Continuous Assessment	Details	Marks
Component 1 (CA-1)	Class Test Average of two class tests of 10 marks	10
Component 2 (CA-2)	Assignment	10

Term End Examination Question Paper Pattern
Total Marks: 30
Q1 Answer any **two** out of the following Three questions (based on Module I)   5*2=10
Q2 Answer any **two** out of the following Three questions (Based on Module II)   5*2=10
Q3 Answer any **two** out of the following Three questions (Based on Both Module I&II) 5*2=10

Prepared by:

Chairperson HOD: Sunil Kadam.

Faculty Members: Dr.Vandana Misra.
                                 Dr.Meena Vazirani
                                 Pradeep Varma.
                                 Dr Ruchi Agrawal
                                 Bhakti Manjrekar
Approved by:

VC Nominee: Dr. Anant Phirke

Subject Expert
(outside parent University):   Prof.Meena Patil (SNDT University.)
                                 Dr Dharmendra Yadav
                                 National Institute of Health & Family Welfare (NIHFW),
                                 New Delhi.

Industry representative: Mr. Sagar Jajal
Meritorious Student: Mr. Kevin Shah