Program: Bachelor of Management Studies (2024-25)	Semester: I
Course: Mathematical and Statistical Techniques I (OE)	Course Code:

Teaching Scheme				Evaluation Scheme	
Lecture (per week) 60 mins	Practical (lectures per week) 60 mins	Tutorial (Hours per week)	Credit	Continuous Assessment (CA)	Semester End Examinations (SEE)
2	-	-	2	40%	60%

Learning Objectives:
- To equip students with basic Mathematical and Statistical tools.
- To make the students aware of applications of Mathematical and Statistical Techniques in Business & Finance.

Course Outcomes:
After completion of the course, learners would be able to:
 CO1: Apply knowledge of Shares and Mutual funds to make wise investment.
 CO2: Use the knowledge of derivatives, in Economics.
 CO3: Calculate averages and use it appropriately in real life problems
 CO4: Understand and appreciate the practical relevance of various basic statistical tools in the Field of finance and economics.

Outline of Syllabus: (per session plan)

Module	Description	No of Hours
1	**Functions and Derivatives**	8
2	**Shares and Mutual Funds**	7
3	**Measures of Central Tendency**	8
4	**Measures of Dispersion**	7
	Total	**30**

Unit	Topic	No. of Hours/Credits
Module 1	**Functions and Derivatives**	**8**
	a) Concept of real functions: constant function, linear function, x^n, e^x, a^x, log x., Demand, Supply, Total Revenue, Average Revenue, Total cost, Average cost and Profit function. Equilibrium Point, Break-even point. b) Derivative of functions: i. Derivative as rate measure, Derivative of x^n, e^x, a^x, log x. ii. Rules of derivatives: Scalar multiplication, sum, difference, product, quotient (Statements only), Simple problems, iii. Applications: Marginal Cost, Marginal Revenue, Elasticity of Demand, finding derivatives of functions in Economics and Commerce.	
Module 2	**Shares and Mutual Funds**	**7**
	a) Shares: Concept of share face value, market value, dividend, equity shares, preferential shares, bonus shares. b) Mutual Funds: Simple problems on calculation of Net income after considering entry load, dividend, change in Net Asset Value (N.A.V.) and exit load. Averaging of price under the Systematic Investment Plan (S.I.P.)	
Module 3	**Measures of Central Tendency**	**8**
	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	
Module 4	**Measures of Dispersion**	**7**
	Concept and idea of dispersion, Various measures of dispersion such as Range, Quartile deviation, Mean Deviation from mean, Standard Deviation and corresponding coefficients, combined standard deviation	

Reference books:

1. Business Mathematics by Dr. S. R. Arora and Dr. Kavita Gupta, Taxmann publication, 2021 re-print.
2. Basic statistics for business & economics by Douglasc A., Lind William, G. Marchal, Samuel A. Wathen 10th edition year 2022.

Prepared by: **Approved by:**

Signature   **Signature**

Head of Department Management   **(Principal)**

Evaluation Pattern

Total Marks allotted: 50 marks

a) **Details of Continuous Assessment (CA)**
         40% of the total marks per course.
         Marks allotted for CA is **20 marks.**
         Breakup of the 20 Marks is as follows:

Continuous Assessment	Details	Marks
Component 1 (CA-1)	Internal class test (online or offline) MCQs/Explain the concepts/Answer in brief/Case study or application-based questions.	**10 marks**
Component 2 (CA-2)	Presentations/Project Work/ Viva-Voce/ Book Review/ Field visit & its presentations/ Assignments/ Group Discussions Etc.	**10 marks**

b) Semester End Exam

QUESTION PAPER FORMAT
All Questions are compulsory

Question Number	Description	Marks	Total Marks
1	on module 1 and 2 Attempt any 3 out of 4 (each question of 5 marks)	5 × 3	15
2	on module 3 and 4 Attempt any 3 out of 4 (each question of 5 marks)	5 × 3	15
		Total Marks	**30**

Signature   Signature

(Program Chairperson & Vice Principal)   (Principal)