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| **Program: Bachelor of Management Studies(2023-24)** | **Semester I** |
| **Course: Business Mathematics** | **Course Code:**  |
| **Teaching Scheme** | **Evaluation Scheme** |
| **Lecture (Hours per week)** | **Practical** | **Tutorial** | **Credits** | **Continuous Assessment (CA)**  | **Semester End Examinations (SEE)**  |
| **02** | **Nil** | **Nil** | **02** | **20** | **30** |
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| **Learning Objectives:** |
| 1. To apply the basics of Mathematical skills which are imperative in Finance and Management.
2. To help students appreciate the importance of mathematics in business.
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| **Learning Outcomes:** |
|  At the end of the course module, the students should be able to:1. Appreciate the applications of Mathematics in Business Management.
2. To understand the practical relevance of mathematical concepts such as Derivatives in areas of Business Management.
3. To understand the practical relevance of financial mathematical concepts related to shares & Mutual funds with understanding of brokerage involved
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| **Pedagogy:** |
| The objective of the course is to encourage students to learn and to appreciate the use of Mathematics. Hence,1. Business Applications of mathematical techniques studied would be discussed in class.
2. Problems given to students would be to test concepts and reasoning. Problems involving detailed calculations/ simplifications will be avoided.
3. Adaptive teaching methods.
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| **Outline of Syllabus:**  |
| **Module** | **Description** | **No of Hours** |
| 1. | **Shares and Mutual Funds**  | 15 |
| 2. | **Derivative of functions and Applications** | 15 |
| **Total** | **30** |
| **PRACTICALS** | **-** |

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| **Detailed Session Plan:** |
| **Module** | **Module Content** | **Module wise Pedagogy Used** | **Duration of Module** |
| **Module I** | . **Shares and Mutual Funds**1. **Shares**: Concept of share, face value, market value, dividend, equity shares,

Preferential shares, bonus shares, Right issue of Share, Split and Consolidation.b. **Mutual Funds**: types of 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.) systematic withdrawal plan (S.W.P.). | Classroom sessions with adaptive methods & computational thinking. | 15 (7+8) |
| **Module II** | **Derivative of functions and Applications:**1. **Functions:** Introduction to functions and Types of Functions: Explicit, Implicit, Single valued, Multi valued, constant, polynomial, Exponential and logarithmic (concepts only) Functions in Economics: Demand function, Supply Function, Cost Function, Total Revenue function, Profit Function
2. **Derivatives:** Derivatives as rate Measure: Derivatives of $xn, ex, ax, log x .$ Rules of differentiation: Scalar multiplication, Sum, difference, product, Quotient and chain rule (statement only) simple problems. Problems on parametric, taking log on both sides not included.
3. **Applications of Derivatives concerning only economic applications:**

Marginal Cost, Marginal Revenue, Elasticity of Demand, Maxima and Minima for functions in Economics and Commerce. (Examination Questions on this unit should be application oriented only.) | Classroom sessions with adaptive methods & computational thinking | 15 (3+7+5) |

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| **Reference Books:**1. Business Mathematics , D. C. Sancheti and V. K. Kapoor , Sultan Chand & Sons, 2006,
2. Mathematics for Business Economics: J. D. Gupta, P. K. Gupta and Man Mohan, Tata Mc‐ Graw Hill Publishing Co. Ltd., 1987
3. Schaum Series STATISTICS , Murray Spiegel, Larry Stephens, Mc Graw Hill
4. Operations Research, Gupta and Kapoor ,S. Chand & Sons Co.
5. Statistical Methods, S.G. Gupta, S. Chand & Sons Co.
6. Business Mathematics & Statistics, B Aggarwal, Ane Book Pvt. Limited
7. Statistics for management, Richard Levin, David S. Rubin, Sanjay Rastogi /Masoos Husain siddiqui. Pearson Publication
8. Mathematics & Statistics, Ajay Goel & Alka Goel., Taxmann’s Publication
9. Quantitative Techniques of Decision Making, Anand Sharma, Himalaya Publishing House
10. Business Statistics Using Excel & SPSS, Nick Lee & Mike, SAGE
11. Business mathematics and statistics, V.R.Nikam, (Chandralok Prakashan)
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## Total Marks allotted: 50 marks

## 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:

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| **Continuous Assessment** | **Details** | **Marks** |
| **Component 1 (CA-1)**  | Internal class test (online or offline)* 2 Class tests will be taken for each course
* Marks scored will be computed as the Average of the marks scored by the learner in the 2 Class tests carrying 10 Marks each
 | **10 marks** |
| **Component 2 (CA-2)** | Presentations/Project Work/ Viva-Voce/ Book Review/ Field visit & its presentations/ Entrepreneurship Fair/ Documentary filming/ Assignments/ Group Discussions Etc. | **10 marks** |

## b) Details of Semester End Examination (SEE)

60% of the total marks per course.

Marks allotted for SEE is **30 Marks.**

Duration of examination will be **One Hour.**

 **QUESTION PAPER FORMAT**

 All Questions are compulsory

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| **Question Number** | **Description** | **Marks** | **Total Marks** |
| **Q1.** | **Answer any 2 from the following** (Module I)a.b.c. | 5 Marks\*2 | 10 |
| **Q2.** | **Answer any 2 from the following:** (Module II)a.b.c. | 5 Marks\*2 | 10 |
| **Q3.** | **Answer any 2 from the following:** (Module I&II)a.b.c. | 5 Marks\*2 | 10 |
|  | **TOTAL MARKS** |  | **30** |



Signature Signature

(Program Chairperson & Vice Principal) (Principal)