

Branch Name:	Management
Program Code:	MS101
Course Title:	Business Mathematics
Course Code:	23-MDC161-2C
Pre-requisite Course:	Basic Mathematics, Elementary Set Theory, Fundamentals of Statistics, Basic Logical Reasoning

Course Objectives:

The objective of this course is to help students understand basic mathematical concepts used in business and management. It aims to develop logical thinking and problem-solving skills through topics such as sets, matrices, sequences, and series. The course introduces permutations and combinations to improve counting and decision-making abilities. It also helps students learn how to use linear programming and transportation methods to find the best solutions when resources are limited. Overall, the course prepares students to apply mathematics effectively in practical and real-life situations.

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	
01	01	-	02	25	25	-	-	50

Course Contents:

Unit No	Topic	Total Hours	Weightage (%)
1	Set Theory: Sets, Types of Sets, Subject, Power Set, Null Set, Universal Set, Equality of Two Sets, Complement of A Set, Union and Intersection of Sets, Different of Two Sets, Venn Diagram Law of Algebra of Sets, De Morgan Laws, Cartesian Product of Two Sets and Number of Elements in A Finite Set	12	20%
2	Determinant and Matrix: Meaning of Matrix and Types of Matrices- Null Matrix, Square Matrix. Identity Matrix, Symmetric Matrix and Skew Symmetric Matrix, Transpose of A Matrix, Addition, Subtraction and Multiplication of Matrices, Determinants and Their Basic Properties (Without Proof), Singular and Non-Singular Matrices, Inverse of A Matrix, Adjoint of A Matrix	18	30%
	Total Hours	30	100%

Text Books:

- Business Mathematics – V.K. Kapoor & Sancheti
- Business Mathematics – Qazi Zameeruddin, V.K. Khanna & S.K. Bhambri
- Mathematics for Economics and Business – R.S. Bhardwaj

Reference Books:

- S. D. Sharma: Operation Research, Kedar Nath & Co., Meerut
- D. C. Sancheti, V. K. Kapoor Business Mathematics Sultan Chand & Sons.
- J. K. Singh Business Mathematics Himalaya Publishing House

List of Open-Source Software/learning website:

- <https://byjus.com/maths/business-mathematics/>
- <https://swayam.gov.in/>
- <https://nptel.ac.in/>
- <https://www.mathplanet.com/>
- <https://illustrativemathematics.org>

Course Learning Outcomes (CLO):

1. Explain and apply the concepts of sets, operations on sets, and laws of algebra of sets in problem solving.
2. Perform operations on matrices and determinants and determine inverse and adjoint of matrices.
3. Solve problems related to sequences and series, including A.P. and G.P.
4. Apply permutation and combination techniques to simple real-life and business problems.
5. Formulate and solve Linear Programming Problems using the graphical method.

Mapping of CLO with PO and PSO

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

H: High, M: Medium, L: Low