

Teaching Lesson Plan

Semester-III

MJ 4: Business Mathematics

Lecture hours: 60

OBJECTIVES: To familiarize students with the applications of Mathematical techniques in business decision making.

SN	Subject and Objectives	Lectures Hrs	Methodology	Evaluation Mode
Unit-I	Matrices and Determinants	10Hrs		
	Overview of Matrices; Definition and types; Algebra of matrices; Applications of matrix operations to simple business and economic problems; Calculation of values of determinants up to third order;	5	PPT, Illustrations	Q & A, Assignments
	Finding inverse of a matrix through determinant method; Solution of system of linear equations up to three variables. Leontief Input Output Model (Open Model Only).	5	PPT, Illustrations	Q & A, Assignments
Unit-II	Permutation and Combination	5Hrs		
	UNIT- II: Permutation and Combination: Basic concept of permutation and combination and simple problems based on permutation and combination.	5	PPT, Illustrations	CIA
Unit-III	Basic Mathematics of Finance	15Hrs		
	Basic Mathematics of Finance: Simple and Compound interest (including continuous compounding); Rates of interest- nominal and effective and their inter-relationships;	10	PPT, Illustrations	Q & A, Assignments
	Compounding and discounting of a sum using different types of rates, annuities, discount-Banker's discount, Trade discount.	5	PPT, Illustrations	Q & A, Assignments
Unit-IV	Mathematical Reasoning and Aptitude	10Hrs		
	Types of reasoning, Number series, Letter series, Codes and Relationships, Mathematical Aptitude (Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Averages).	5	PPT, Illustrations	Q & A, Assignments
Unit-V	Differentiation and Integration	10Hrs		
	Concept and rules of differentiation; applications of differentiation - elasticity of demand and supply, Maxima and Minima of functions relating to cost, revenue and profit.	5	PPT, Illustrations	Q & A, Assignments
	Concept and basic rules of integration of a function. Application in Business and commerce.	5	PPT, Illustrations	Q & A, Assignments
Unit-VI	Linear Programming Problem	10Hrs		

	LPP: Objective Functions, Constraints, Mathematical Formulation Of LPP, Graphical Solution to LPP, Feasible and Infeasible Regions/ Solution, Optimal Feasible Solution.	10	PPT, Illustrations	Q & A, Assignments
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Reference Books:

- R. R. Das, Mrityunjay Kumar, Business mathematics, Agra (U.P.), Shiksha Sagar Publisher and Distributors.
- B.N. Gupta, Shyamlesh Kumar, Business Mathematics, Agra (U.P.), Sahitya Bhawan Pub. and Distributors.
- Bhardwaj, R. S. (2019). Business Mathematics and Statistics. New Delhi: Scholar Tech Press.
- Richard, I. L., Masood, H. S., David, S. R., & Rastogi, S. (2017). Statistics for Management. New Jersey: Pearson Education.
- Thukral, J. K. (2017). Business Mathematics and Statistics. New Delhi: Maximax Publications.
- Vohra, N. D. (2014). Business Mathematics and Statistics. New Delhi: Tata McGraw Hill Education India

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