



Indraprastha College for Women

University of Delhi

Course Name:	B.COM (H)
Paper Title:	Business Mathematics
Unique Paper Code:	241208301
Semester:	III
Faculty(s):	Dr. Rajneesh Prakash Verma
Year:	2026-27

Work Plan			
Period	Unit No.	Learning Objective	Topics to be Covered
28 th July – 1 st July	4		Rates of interest: nominal, effective and their inter-relationships in different compounding situations.
3 rd Aug. – 8 th Aug.	4		Compounding a sum using different types of rates. Applications relating to Depreciation of assets and average due date.
10 th Aug. – 15 th Aug.	4		Types of annuities: ordinary, due, and deferred - Discrete and continuous.
17 th Aug. – 22 nd Aug.	4		Perpetuity. Determination of future and present values using different types of rates of interest.
24 th Aug. – 29 th Aug.	4		Applications relating to Capital Expenditure and Leasing.
31 st Aug. – 5 th Sept.	2		Concepts and rules of differentiation.
7 th Sept. – 12 th Sept.	2		Concept of Marginal Analysis: Marginal Revenue, Marginal Cost.
14 th Sept. – 19 th Sept.	2		Concept of Elasticity of demand and supply.
21 st Sept. – 26 th Sept.	2		Application of Maxima and Minima problems: Revenue, Cost, Profit, Economic Order Quantity, Optimal trade in time
28 th Sept. – 3 rd Oct.	3		Partial Differentiation: Partial derivatives up to second order.
5 th Oct. – 10 th Oct.	3		Homogeneity of a function and Euler's theorem.
12 th Oct. – 17 th Oct.	3		Production Function: Returns to factor, Returns to scale. MRTS and Elasticity of Substitution.
19 th Oct. – 24 th Oct.	AUTUMN BREAK		
26 th Oct. – 31 st Oct.	3		Application of Maxima and Minima problems involving two independent variables.
2 nd Nov. – 7 th Nov.	3		Integration: Nature of commodities and partial elasticity of demand
9 th Nov. – 14 th Nov.	3		Applications of marginal analysis, Consumer Surplus and Producer Surplus
16 th Nov. – 19 th Nov.			Revision
20 th Nov.	DISPERSAL OF CLASSES		

Unit	TOPICS
I	Matrices and Determinants Overview of Matrices. Solution of a system of linear equations (having a unique solution and involving not more than three variables) using matrix inversion method and Cramer's Rule Leontief Input Output Model (Open Model Only).
II	Calculus-I Concepts and rules of differentiation. Concept of Marginal Analysis: Marginal Revenue, Marginal Cost. Concept of Elasticity of demand and supply. Application of Maxima and Minima problems: Revenue, Cost, Profit, Economic Order Quantity, Optimal trade in time
III	Calculus-II Partial Differentiation: Partial derivatives up to second order. Homogeneity of a function and Euler's theorem. Production Function: Returns to factor, Returns to scale. MRTS and Elasticity of Substitution. Application of Maxima and Minima problems involving two independent variables. Integration: Nature of commodities and partial elasticity of demand, Applications of marginal analysis, Consumer Surplus and Producer Surplus
IV	Mathematics of Finance Rates of interest: nominal, effective and their inter-relationships in different compounding situations. Compounding a sum using different types of rates. Applications relating to Depreciation of assets and average due date. Types of annuities: ordinary, due, and deferred - Discrete and continuous. Perpetuity. Determination of future and present values using different types of rates of interest. Applications relating to Capital Expenditure and Leasing.
V	Linear Programming Formulation and Assumptions of LPP, Solution by Simplex Method- maximization and minimization cases. Shadow prices of the resources. Special Cases: Identification of unique and multiple optimal solutions, unbounded solution, infeasibility and degeneracy.
S. No.	Name of Authors/Books/Publishers
1.	Thukral, J. K. (2009). <i>Mathematics For Business Studies</i> . New Delhi: Mayur paperbacks.
2.	Sharma, S.K.; Kaur, G. (2009). <i>Business Mathematics</i> . New Delhi: Taxmann Publications.