



Indraprastha College for Women

University of Delhi

Course Name:	B.COM(H)
Paper Title:	Business Mathematics
Unique Paper Code:	241208301
Semester:	3
Faculty(s):	Archna Gupta
Year:	2024-25

Work Plan			
Period	Unit No.	Learning Objective	Topics to be Covered
1 st Aug -3 rd Aug	5		Linear Programming introduction
5 th Aug-10 th Aug	5		Simplex Method
12 th Aug-17 th Aug	5		Maxima with less than or equal to constraint
19 th Aug-24 th Aug	5		Minima with greater than or equal to constraint
26 th Aug-31 st Aug	5		Mix constraints and special cases
2 nd Sep-7 th Sep	2		Concept and rules of Differentiation
9 th Sep-14 th Sep	2		Application of differentiation
16 th Sep-21 st Sep	3		Partial differentiation
23 rd Sep-28 th Sep	3		Application of partial differentiation
30 th Sep-5 th Oct	3		Eule's Theorem and production function
7 th Oct-12 th Oct	3		MRTS and elasticity of substitution
14 th Oct-19 th Oct	3		Integration
21 st Oct-26 th Oct	3		Application of integration
28 th Oct-2 nd Nov			MID SEMESTER BREAK
4 th Nov-9 th Nov	4		Types of Annuities and their Application
11 th Nov-16 th Nov	4		Types of Annuities and their Application
18 th Nov-23 rd Nov	4		Valuation of Simple Loans and Debentures
25 th Nov-27 th Nov			Revision
28 th Nov			DISBERSAL OF CLASSES

Unit	TOPICS
I	<p>Matrices and Determinants</p> <p>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</p> <p>Leontief Input Output Model (Open Model Only).</p>
II	<p>Calculus-I</p> <p>Concepts and rules of differentiation. Concept of Marginal Analysis: Marginal Revenue, Marginal Cost. Concept of Elasticity of demand and supply.</p> <p>Application of Maxima and Minima problems: Revenue, Cost, Profit, Economic Order Quantity, Optimal trade in time</p>
III	<p>Calculus-II</p> <p>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.</p> <p>Application of Maxima and Minima problems involving two independent variables.</p> <p>Integration: Nature of commodities and partial elasticity of demand, Applications of marginal analysis, Consumer Surplus and Producer Surplus</p>
IV	<p>Mathematics of Finance</p> <p>Rates of interest: nominal, effective and their inter-relationships in different compounding situations.</p> <p>Compounding a sum using different types of rates. Applications relating to Depreciation of assets and average due date.</p> <p>Types of annuities: ordinary, due, and deferred - Discrete and continuous.</p> <p>Perpetuity. Determination of future and present values using different types of rates of interest. Applications relating to Capital Expenditure and Leasing.</p>
V	<p>Linear Programming</p> <p>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.</p>
S. No.	Name of Authors/Books/Publishers
1.	Thukral, J. K. (2009). <i>Mathematics For Business Studies</i> . New Delhi: Mayur Paperbacks.
2.	
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