

**DR. BABASAHEB AMBEDKAR OPEN UNIVERSITY
SCHOOL OF COMMERCE & MANAGEMENT**

B.B.A. (Bachelor of Business Administration)

SEMESTER –I (Major (Core) - Credit -4)

BUSINESS MATHEMATICS

Course Objectives

- To sharpen mathematical abilities in making Business Decision
- Improve logical and reasoning abilities

UNIT 1	Exponents and Surds		
	Exponents or index notation Exponent or Index Laws Zero and Negative Indices Surds Properties of Surds Multiplication and Division of Surds Examples		
UNIT 2	Set Theory		
	Concept of a Set, Method of Representing Sets Types of Sets, Some important Number Sets Operation of Sets <ul style="list-style-type: none"> ○ Intersection of Sets ○ Union of Sets (with Proof) Distributive Laws <ul style="list-style-type: none"> ○ Union over Intersection ○ Intersection over Union (with Proof) Complimentary of Set - De- Morgan's Laws (With Proof) Difference of Two Sets, Cartesian product Examples		
UNIT 3	Permutation and Combination		
	Meaning and Definition of Permutations Permutations of different things Permutations of Similar things Restricted Permutation Meaning and Definition of Combinations Combinations of things taken some or all at time Some Restricted Combinations Examples		
UNIT 4	Binomial Theorem		
	Introduction of Binomial Theorem (Without Proof) Characteristics of Binomial theorem Expansion of Binomial		

	Position of Terms and Middle Terms Binomial Coefficient Examples		
UNIT 5	Arithmetic and Geometric Progression		
	Arithmetic Progression (A.P.) Definition of Arithmetic Progression n^{th} term and Sum of n terms of A.P. (With Proof) Geometric Progression (G.P.) Definition of Geometric Progression n^{th} term and Sum of n terms of G.P. (With Proof) Examples		
UNIT 6	Determinant		
	Definition Order $2 \times 2, 3 \times 3$ Cramer's rule (two, three variables) Properties of determinant Examples		
UNIT 7	Matrix		
	Definition Types of Matrices Matrix Operation 1. Addition, Subtraction 2. Product and their properties Transpose of Matrix Adjoint of Matrix, Inverse of Matrix Solution of Simultaneous linear equation using inverse matrix Examples		
UNIT 8	Co-ordinate Geometry		
	Introduction to Co-ordinates Quadrants and Lines Distance between two points in R^2 (Without Proof) Section Formula (Without Proof) Area of Triangles (Without Proof) Typical Examples		
UNIT 9	Differentiation		
	Differentiation from first principle Differentiation using standard form Differentiation of composite function Differentiation of product function Differentiation of Quotient function Implicit Differentiation		
UNIT 10	Application of Differentiation		
	Application of Differentiation Function Related to Economics		

	Function Related to Business Consumption Function		
UNIT 11	Integration		
	Indefinite Integration Standard Integral Formula Theorem of Integration Integration by Substitution Integration by parts		
UNIT 12	Application of Integration		
	Definite Integration Application of Integration Function Related to Economics Function Related to Business Consumption Function		
UNIT 13	Mathematics of Finance		
	Introduction Simple Interest, Compound Interest Effective Rate of Interest Present Value of Money under compound interest		
UNIT 14	Annuity		
	Future value of Immediate Annuity Future value of Annuity Due Present value of Immediate Annuity Present value of Annuity Due		