B. J. VANIJYA MAHAVIDYALAYA
(Autonomous)
(Grant-in-Aid)
(Affiliated to Sardar Patel University)
Vallabh Vidyanagar- 388 120, Dist. Anand, Gujarat, India
Accredited with CGPA of 2.78 on four-point scale at B++ Grade by NAAC
Syllabus as per the NEP 2020 with effect from June – 2024

Bachelor of Business Administration BBA (General)

Semester - I

Course Code	UM01IDBBA01	Title of the Course	Business Mathematics -I
Total Credits of the Course	04	Hours per week	04

Course Objectives:	**1)** This course aims to furnish the students with the Mathematical and Statistical foundation required for business management and Commerce and to know the function of Mathematics and Statistics in the Commerce and Management field. **2)** To provide college students with reinforcement of Mathematical and Statistical computations. **3)** To develop Mathematical skills and their application in various business contexts **4)** To enhance their ability to analyze and interpret financial data. **5)** To make informed business decisions and effectively communicate Mathematical concepts in a business environment **6)** To develop the ability to communicate Mathematical ideas and solutions clearly and effectively to others.

Course Content		
Unit No.	**Description**	**Weightage (%)**
1.	**Function and Limit:** • Concept of a single variable (linear, quadratic and exponential function only) Domain, co-domain, and range of a function. • Concept of limit of a function, Rules of limit, Simple examples based on polynomial and rational function.	**25%**
2.	**Set Theory and Determinants:** • Definition of Sets and methods of representing sets, Types of sets : Subsets, Equality of two sets, null set, universal set,	**25%**

	power set, complements of a set, union and intersection of sets, difference of two sets. • Venn Diagram (Concept only), Laws of algebra of sets, De 'Morgan laws and Cartesian Product of two sets. • Examples based on rules of set theory • Determinants: Meaning and definition of Determinant and types of Determinants, Basic properties of determinant (without Proof, without examples), Cramer's rule Method For solving linear equations of two variables and three variables.	
3.	**Matrix:** • Meaning and definition of Matrix, Type of matrices: Square, Null, Identity, Transpose of Matrices, Symmetric, Skew symmetric, Singular, Non Singular, Inverse, Adjoin of matrix. • Matrices - scalar multiplication, Addition, Subtraction, Multiplication. Solution of a system of two linear equations using concept of Inverse matrix. Examples of matrix theory based on Commerce and Management.	**25%**
4.	**Co-ordinate Geometry:** • Cartesian Co-ordinate System, Distance between two points, slope of line, slopes of Parallel and perpendicular lines, Equations of a line for: - Two Point Form - Point Slope form - Intercept form - Two Intercept Form. Examples based on various equations of straight lines.	**25%**

Teaching-Learning Methodology	The course would be taught /learnt through ICT (e.g. Power Point Presentation, Audio-Visual Presentation), Lectures, Group Discussions, Quizzes, Assignments, Case Study and Browsing E- Resources.

Evaluation Pattern		
Sr. No.	**Details of the Evaluation**	**Weightage**
1.	Internal Written / MCQ (As per CBCS R.6.8.3)	**30%**
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quiz, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	**20%**
3.	Final Examination	**50%**

Course Outcomes: Having completed this course, the learner will be able to	
1.	Lead to the students to analyze any real life system with limited constrains and depict it in model form.
2.	To have a proper understanding of Statistical and Mathematical applications in Economics, Finance, Commerce and Management Integrate international business concepts with functioning of global trade.
3.	Convert the problem into a Mathematical model and solve it manually.
4.	Students will be able to understand and apply the principles of set theory in business related problems.
5.	Students will be demonstrate a solid understanding of determinants and their properties, and apply them in solving business-related problems, such as solving systems of linear equations and evaluating the feasibility of business plans.
6.	Student will be able to manipulate matrices effectively, including matrix operations, determinants, inverses, and transpose, and apply them in various business applications, such as production planning and financial analysis.
7.	Students will be able to apply mathematical concepts and techniques in the field of finance, such as understanding interest rates and calculating present and future values of annuities.
8.	Students will enhance their thinking and analytical abilities in business problem-solving.

Suggested References:	
Sr. No.	**References :**
1.	Sancheti & Kapoor: Statistic: Theory, Methods and Applications, Sultan Chand & Sons,NewDelhi.
2.	Kapoor, V. K.: Business Mathematics, Sultan Chand and Sons, New Delhi.
3.	Soni, R. S.: Business Mathematics, Pitamber Publishing House.
4.	H. A. Taha, Operations Research Macmillan Publishing Co. Inc.
5.	J. K. Sharma: O. R. Theory and Applications, Macmillan India Ltd. 6 A.J. Patel, H.S.Doshi: Operations Research, Himalaya Publishing House.

******