

C P PATEL AND F H SHAH COMMERCE (AUTONOMOUS) COLLEGE, ANAND

(Managed by SARDAR PATEL EDUCATION TRUST, ANAND)

AFFILIATED TO SARDAR PATEL UNIVERSITY, V V NAGAR

An ISO 9001 2015 Certified / An ISO 14001-2015 Certified / An ISO 21001-2018 Certified

GUJARAT INSTITUTIONAL RATING FRAMEWORK (4 STAR)

AAA Reaccredited CGPA 3.56 – GRADE **A⁺** KCG-Dept of Edu. Got of Gujarat-April 2017

NAAC Reaccredited - CGPA 3.30 - GRADE **'A⁺**' UGC – MHRD, Govt of India – June 2022

Syllabus as per NEP 2020 with effect from the Academic Year 2023-2024

Bachelor of Commerce (BCOM)

Semester - I

Course Code	UB1MICOM02	Title of the Course	Business Mathematics & Statistics-I
Total Credits of the Course	04	Hours per Week	04

Course Objectives	1. To develop Mathematical and Statistical skills and their application in various business contexts
	2. To enhance their ability to analyze and interpret financial data.
	3. To make informed business decisions and effectively communicate Mathematical and Statistical concepts in a business and commerce environment.
	4. To develop the ability to communicate mathematical and Statistical ideas and solutions clearly and effectively to others.

Course Content		
Unit	Description	Weightage (%)
1.	Set Theory and Determinant: Set Theory: Sets, Subsets, Equality of two sets, null set, universal set, 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. Applications of set theory in commerce. Determinant: Meaning of 2×2 Determinant, Expansion of third order determinant, properties of determinant (without proof), Cramer's Method for solving system of linear equations (For two variables only)	25%
2.	Matrix: Definitions of matrix, Type of matrices: Row matrix, Column Matrix, Square Matrix, Null Matrix, Transpose of Matrix, Symmetric Matrix, Skew symmetric Matrix, Diagonal Matrix, Scalar Matrix, Identity Matrix, Adjoin of Matrix, Inverse of Matrix, Addition, Subtraction, Scalar product and Multiplication of Matrices, Solution of linear equations for two and three variables. Applications of Matrix in Commerce	25 %

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3.	Measures of Central Tendency: Introduction to Statistics, Merits and demerits of Statistics, Meaning of Measure of central Tendency, Characteristics of Ideal measures of central Tendency, Definition and calculation of mean, Median Mode Quartiles Deciles and Percentiles, Combined Mean	25 %
4.	Measures of Dispersions: Meaning of Measure of dispersion, Characteristics of Ideal measure of dispersion, Definition and calculation of Range, Quartiles Deviation, Standard Deviation, Variance, Coefficient of Variance (CV), Relative measures of dispersion	25 %

Teaching-Learning Methodology	Lectures, Assignment, Quiz, Seminars, Content- Focused Methods, Interactive / Participative Methods and online lectures.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written Examination	30%
2.	Internal Continuous Assessment in the form of Quizzes, Seminars, Assignments, Viva voce, Attendance	20%
3.	Semester end Examination	50%

Course Outcomes	
1.	Students should understand and apply the principles of set theory in business contexts, such as market segmentation, probability and decision analysis.
2.	Student should demonstrate proficiency in calculating and interpreting determinants, using them in solving systems of linear equations, and applying them to model real-world business scenarios.
3.	Students should able to manipulate matrices effectively, including matrix operations, determinants, inverses, and transpose, and utilize them in business applications such as optimization, production planning, and finance.

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4.	Students should able to calculate and interpret measures of central tendency, such as mean, median, and mode to analyze and summarize business data, such as sales figures, market research results, and financial statements.
5.	Student should able to compute measures of dispersion, such as variance and standard deviation, to understand the spread and variability of data, and apply them in risk analysis, quality control and financial risk assessment.

Suggested References

Sr. No.	References
1	Sancheti & Kapoor: Statistics Theory, Methods and Applications, Sultan Chand & Sons, New-Delhi.
2	Kapoor, V. K.: Business Mathematics, Sultan Chand and Sons, New Delhi.
3	Soni, R. S.: Business Mathematics, Pitamber Publishing House.
4	Trivedi and Trivedi: Business Mathematics, Pearson India Limited. New Delhi.
5	Dr. K R Kachot: Business Mathematics, Mahajan Publication House.
6	S C Gupta: Fundamentals of Statistics, Himalaya Publishing House
7	Prof. H R Vyas and Others, Business Statistics, B S Shah Prakashan
8	R P Hooda: Statistics for Business and Economics, Mac Millian Publication, New Delhi

On-line resources to be used if available as reference material

On-line Resources

<https://atozmath.com/default.aspx>

<https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=ZLChEzEhCZ8yCri36nSF3A==>
