



Since 1951

## 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-pointscale at B++Grade by NAAC

Syllabus as per the NEP 2020 with effect from - December 2025

Bachelor of Commerce (B. Com.)

### Semester – IV

Course Code	UB04SECOM04	Title of the Course	Mathematical Statistics
Total Credits of the Course	02	Hours per week	02

<b>Course Objectives:</b>	1) To enhance to enhance analytical ability in students for processing data. 2) To familiarize students with applications of Statistical techniques in business decision Making.
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Course Content		
Unit No.	Description	Weightage (%)
1	<b>Probability:</b> <ul style="list-style-type: none"><li>Terminology: Event, Sample space, Mutually exclusive, equally likely, exhaustive, joint, dependent, independent events</li><li>Definition - Concepts of Probability - Calculation of Probability - Addition and Multiplication theorem.</li><li>Mathematical Expectation: Meaning and properties. Simple Examples on <math>E(x)</math>; <math>V(x)</math>.</li></ul>	50%
2	<b>Probability Distribution:</b> <ul style="list-style-type: none"><li>Meaning and importance of Probability distributions, Binomial, Poisson and Normal distribution meaning, pdf, its properties (Without proof) - simple Examples.</li></ul>	50%

<b>Teaching-Learning Methodology</b>	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.
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### Internal and External Examination Evaluation

Sr. No.	Details of the Evaluation / Exam Pattern	50 Marks (%)	25 Marks (%)
1	Class Test (at least one)	15 (30%)	10 (40%)
2	Quiz (at least one)	15 (30%)	05 (20%)
3	Active Learning	05 (10%)	----
4	Home Assignment	05 (10%)	05 (20%)
5	Class Assignment	05 (10%)	----
6	Attendance	05 (10%)	05 (20%)
<b>Total Internal (%)</b>		<b>50 (100%)</b>	<b>25 (100%)</b>
<b>Final Examination (%)</b>		<b>50 (100%)</b>	<b>25 (100%)</b>

Sr. No.	Course Outcomes: Having completed this course, the learner will be able to
1)	Understand fundamental concepts of probability, including sample spaces, events, and probability.
2)	Analyze discrete random variables using binomial models for success-failure experiments.
3)	Model rare event occurrences using Poisson distribution and interpret its parameters.
4)	Explore properties of the normal curve and its role in statistical inference.

Sr. No.	Suggested References:
1)	Gupta, S. C. (2011). Fundamentals of Statistics (6th enlarged ed.). Himalaya Publishing House.
2)	Gupta, S. C., & Kapoor, V. K. (2007). Fundamentals of Applied Statistics (4th ed.). Sultan Chand & Sons.
3)	H R Vyas (2017): Business Statistic, B S Shah Publication, Ahmedabad
5)	Ken Black (2023): Business Statistics: For Contemporary Decision Making, 10th Edition, Jhon Wiley & Sons
4)	Sharma, J. K. (2014). Fundamentals of Business Statistics (2nd ed.). Vikas Publishing.

Sr. No.	On-Line Resources available that can be used as Reference Material
1)	<a href="https://www.youtube.com/watch?v=CXBwRv-DGxI">https://www.youtube.com/watch?v=CXBwRv-DGxI</a>
2)	<a href="https://www.youtube.com/watch?v=Dse4I0SHL8Y">https://www.youtube.com/watch?v=Dse4I0SHL8Y</a>
3)	<a href="https://onlinecourses.swayam2.ac.in/cec24_ma04/preview">https://onlinecourses.swayam2.ac.in/cec24_ma04/preview</a>

