



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 |

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|---------------------------|---|
| Course Objectives: | <ol style="list-style-type: none"> 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 | Probability: <ul style="list-style-type: none"> Terminology: Event, Sample space, Mutually exclusive, equally likely, exhaustive, joint, dependent, independent events Definition - Concepts of Probability - Calculation of Probability - Addition and Multiplication theorem. Mathematical Expectation: Meaning and properties. Simple Examples on $E(x)$; $V(x)$. | 50% |
| 2 | Probability Distribution: <ul style="list-style-type: none"> Meaning and importance of Probability distributions, Binomial, Poisson and Normal distribution meaning, pdf, its properties (Without proof) - simple Examples. | 50% |

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|--------------------------------------|---|
| 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. |
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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%) |
| Total Internal (%) | | 50 (100%) | 25 (100%) |
| Final Examination (%) | | 50 (100%) | 25 (100%) |

| 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: |
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| 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) | https://www.youtube.com/watch?v=CXBwRv-DGxI |
| 2) | https://www.youtube.com/watch?v=Dse4I0SHL8Y |
| 3) | https://onlinecourses.swayam2.ac.in/cec24_ma04/preview |