**SARDAR PATEL UNIVERSITY**
**Vallabh Vidyanagar, Gujarat**
**(Reaccredited with 'A' Grade by NAAC (CGPA 3.11)**
**Syllabus with effect from the Academic Year 2024-2025**

## (Bachelor of Science in Statistics) (Bachelor of Science)
## (B. Sc.) (Statistics) Semester (III)

| Course Code | US03SESTA01 | Title of the Course | ELEMENTS OF PROBABILITY IN BIOSTATISTICS |
|---|---|---|---|
| Total Credits of the Course | 02 | Hours per Week | 02 |

| Course Objectives: | 1. Understand the basic principles of probability theory<br>2. Understand the basic concepts of probability distributions to learn concepts of testing of hypothesis |
|---|---|

| Course Content | | |
|---|---|---|
| Unit | Description | Weightage* (%) |
| 1 | Some Basic Probability Concepts:<br><br>Operations on events and probability, Elementary properties of probability, Calculating the probability of an event, Conditional probability, Bayes' theorem, diagnostic tests – sensitivity and specificity | 50 |
| 2 | Discrete Probability Distributions: Binomial and Poisson and its applications in the field of Biosciences.<br><br>Continuous Probability distribution: Normal distribution, Definition, Properties (without proof), Area under normal curve, Applications | 50 |

| Teaching-Learning Methodology | |
|---|---|

| Evaluation Pattern | | |
|---|---|---|
| Sr. No. | Details of the Evaluation | Weightage |

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| 1. | Internal Written / Practical Examination (As per CBCS R.6.8.3) | 15% |
|---|---|---|
| 2. | Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3) | 15% |
| 3. | University Examination | 70% |

| Course Outcomes: Having completed this course, the learner will be able to | |
|---|---|
| 1. | Apply the concepts of probability distributions applied in the field of bioscience. |
| 2. | Understand and use of Binomial and Poisson distributions in real life. |
| 3. | Understand and use of Normal distribution in real life. |

| Suggested References: | |
|---|---|
| Sr. No. | References |
| 1. | Mahajan B.K : Methods in Biostatistics for Medical students and Research workers, Jaypee Brothers Medical Pub. |
| 2. | Sancheti D.C. and Kapoor V.K. : Statistics |
| 3. | Wayne W. Daniel: Biostatistics – A Foundation for Analysis in the Health Sciences, seventh edition, Wiley India edition. |
| 4. | Marcello Pagano: Principles of Biostatistics, Second edition, by Cengage learning, India edition. |

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