SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))
Programme: B.COM Semester: IV
Syllabus with effect from the Academic Year: 2022-2023

B.COM. SEMESTER-IV		
Paper Code **UB04DCOM85**	**Title of the Paper** **ADVANCED STATISTICS – VII**	**Total Credit** **3**
Course Objectives	The objective of the course is to understand the emerging role of business analytics in Organizations and its fundamental concepts and tools in statistics.	

Course Description		
Unit	**Description**	**Weightage**
1.	**Mathematical Expectation** Joint probability distribution of two variables X and Y, their marginal probability distributions, expected values of X+Y and X·Y and their properties, covariance between X and Y, properties of variance for dependent and independent variables, Examples related to these property and its applications.	**25%**
2.	**Discrete Probability Distribution - 1** Probability mass function of Binomial distribution, simple applications, deriving mean and variance of Binomial distribution, properties of Binomial distribution, fitting of Binomial distribution and its applied examples. Probability mass function of Poisson distribution as a limiting case of Binomial distribution (without proof), simple applications, deriving mean and variance of Poisson distribution, properties of Poisson distribution, fitting of Poisson distribution	**25%**
3.	**Discrete Probability Distribution - 2** Probability mass function of Negative Binomial distribution and Geometric distribution, simple applications, deriving mean and variance of these distributions, and their properties and simple examples, Probability mass function of Hyper-geometric distribution, properties of Hypergeometric distribution and simpleapplications,	**25%**
4.	**Continuous Probability Distribution** Probability Density Function of Normal distribution, deriving mean and variance of Normal distribution, properties of Normal distribution, examples based on it and applied problems of Normal distribution.	**25%**

*Units will have the same Weightage in the evaluation as suggested in the course outline.

Teaching-Learning Methodology	• Lecture Method • Online Lectures • Group Discussion • Practical Problem Solving

Evaluation Pattern		
Sr. No.	**Details of the Evaluation**	**Weightage**
1.	Internal/Written Examination	**15%**

2.	Internal Continuous Assessment in the form of Practical, Viva-Voce, Quizzes, Seminars, Assignments, Attendance	**15%**
3.	University Examination	**70%**

* Students will have to score a minimum of 40 (Forty) Percent to pass the course.

Course Outcomes: Having Completed this course, the students will be able to

- Use the basic probability rules, including additive and multiplicative laws, using the terms, independent and mutually exclusive events.
- Translate real-world problems into probability models.
- Derive the probability density function of transformation of random variables.
- Calculate probabilities, and derive the marginal and conditional distributions of bivariate random variables.

Suggested References: (include Reference Material from where a student is expected to study the said content in APA Style) Reference Websites can also be included)

Sr. No	References
1.	Goon. Gupta, Dasgupta : "An outline of Statistical Theory" Vol-1 and II. World Press, Calcutta
2.	Sancheti& Kapoor : Business Statistics. Sultan Chand & Sons, NewDelhi.
3.	S.C. Gupta: "Fundamentals of Mathematical Statistics" Sultan Chand & Sons, NewDelhi.
4.	Levin and Rubin: "Statistics for Management", Prentice Hall of India Pvt. Ltd. NewDelhi.
5.	Parimal Mukhopadhyay : "Mathematical Statistics" Books & Allied (P)Ltd

On-Line Resources available that can be used as Reference Material

https://ugcmoocs.inflibnet.ac.in/view_module_ug.php/157