

Enclosure - V

Offering Department: Mathematics Department
Part – II Generic Elective – II
To be offered in Semester – VI
effective for the students admitted from 2016-2017 onwards

GE - II Semester – VI			
16UMAGE02	GE-II Probability & Distributions	2hrs/week	2Credits

Objectives:-

Upon completion of the course students will be able to

1. Understand basic concepts of set theory and logic.
2. Understand the nature of any random experiment and construct sample space..
3. Calculate mathematical expectation of a discrete random variable.
4. Understand and construct the probability distribution and find mean and variance of the given Binomial Distribution and Poisson Distribution.

Unit 1: Set Theory & Logic

(4Hrs)

- Basic of Intuitive set theory.
- Operations for sets.
- Algebra of sets.
- Vann Diagram.
- Logic.
- The statement calculus-Truth table.
- The statement calculus-Consequence.
- The statement calculus-Applications.

Unit 2: Probability

(5Hrs)

- Random Experiments.
- Sample Space.
- Generation of Sample Space.
- Events & Algebra or Events.
- Laws of probability.
- Theorems of probability.
- Bayes' Theorem.

Unit 3: Mathematical Expectation

(5Hrs)

- Discrete random variable.
- Probability distributions of a discrete random variable.
- Mathematical Expectation of a discrete random variable.
- Variance of a random variable.

Unit 4: Probability distributions

(5Hrs)

- Introduction.
- Binomial Distribution.

- Mean and Variance of Binomial Distribution.
- Properties of Binomial Distribution.

Unit 5: Poisson Distribution

(5Hrs)

- Poisson Distribution.
- Mean and Variance of Poisson Distribution.
- Properties of Poisson Distribution.

TEXT BOOKS: -

1. Digambar Patri, D. N. Patri, Statistical Methods, Kalyani Publications.
2. Prof. H. R. Vyas, Business Statistics, B. S. Shah Prakashan.

REFERENCE BOOKS:-

1. Nabendu Pal, Sabaded Sarkar, Statistics concepts and Applications, Prentice Hall of India.
2. J. N Kapur, H. C Saxena, Mathematical Statistics, S. Chand & Company Ltd.
3. P.S.S. Sundar Rao, J.Richard, Introduction to BioStatistics and Research Method, PHI Learning Private Ltd.