Program: **Bachelor's Degree** Class: **UG**	Year: **Third**	Semester: **VI**
Subject: **Mathematics**		
Course Code: **MN-2C**	Course Title: **Probability Theory**	

Course Learning Outcomes: This course will enable the students to:

a) Use basic counting techniques (multiplication rule, combinations, permutations) to compute probability and odds.
b) Compute conditional probabilities directly and using Bayes' theorem, and check for independence of events.
c) Set up and work with discrete random variables. In particular, understand the Bernoulli, binomial, geometric and Poisson distributions.
d) Work with continuous random variables. In particular, know the properties of uniform, normal and exponential distributions.

Credit: **4 (Theory)**	**Compulsory**
Full Marks: **75**	Time: **3 Hours**

Unit	Content	Hours
I	Random experiment, Sample Space, Algebra of events, Probability of an event, mutually exclusive events, addition theorem, Conditional probability, independent events, multiplication theorem, Total probability, Baye's theorem,	15
II	Random Variables and Distribution Functions, Introduction, Distribution Functions of Discrete Variables, Distribution Functions of Continuous Variables, Mathematical Expectations,	15
III	Binomial Distribution, Poisson's Distribution, Hypergeometric distribution, Normal & Negative binomial distribution,	15
IV	Frequency distribution, graphical and diagrammatic representation of data. Measures of location and dispersion, moments, skewness and kurtosis. Curve fitting, association of attributes. Simple correlation and regression,	15

Sessional Internal Assessment (SIA) Full Marks 25 Marks
A Internal written Examination 20 Marks (1 Hr)
B Over All Performance including Regularity 05 Marks

Books Recommended:

1. Fundamental of Mathematical Statistics: Gupta & Kapoor
2. Probability and Statistics for Engineering and the Sciences: Jay L. Devore,