1.	Title of the course	Probability Theory
2.	Course number	MA512L
3.	Structure of credits	3-1-0-4
4.	Offered to	PG
5.	New course/modification to	Modification To MA5113/10
6.	To be offered by	Department of Mathematics and Statistics
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To introduce the mathematical abstractions of uncertainties of nature using single and multivariate random variables. To show different measures of the likelihood of an event subject to given conditions.	
10.	**Course Content:** Axioms of probability, conditional probability and independence, random variables and distribution functions, random vectors and joint distributions, functions of random vectors; Moments, Markov and Chebyshev's inequality, moment generating functions and characteristic functions, conditional distributions; Modes of convergence, weak and strong laws of large numbers, central limit theorem.	
11.	**Textbook(s):** 1. Feller W, *An introduction to probability theory and its applications*, John Wiley& Sons (2008). 2. Ross S, *A first course in probability*, Pearson Education India (2002).	
12.	**Reference(s):** 1. Billingsley P, *Probability and measure*, John Wiley & Sons (2008). 2. Hoel P G, Port S C and Stone C J, *Introduction to Probability*, Universal Book Stall (1998). 3. Rosenthal J S, *A First Look at Rigorous Probability Theory*, World Scientific (2006).	