

1.	Title of the Course	Probability Theory
2.	Course Number	MA5113
3.	Status of the Course	Core
4.	Structure of Credits	3-1-0-4
5.	Offered To	PG
6.	New Course/Modification to	Modification To MA5113
7.	To be Offered by	Department of Mathematics
8.	To take effect from	July 2019
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: 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.	
12.	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.	
13.	Text book(s): 1. Feller W, <i>An introduction to probability theory and its applications</i> , John Wiley & Sons (2008). 2. Ross S, <i>A first course in probability</i> , Pearson Education India (2002).	
14.	Reference(s): 1. Billingsley P, <i>Probability and measure</i> , John Wiley & Sons (2008). 2. Hoel P G, Port S C and Stone C J, <i>Introduction to Probability</i> , Universal Book Stall (1998). 3. Rosenthal J S, <i>A First Look at Rigorous Probability Theory</i> , World Scientific (2006).	