Program: B.Com.(Economics)				Semester: II	
Course: Mathematical and Statistical Techniques II (OE)				Course Code:	
Teaching Scheme				Evaluation Scheme	
Lecture (per week) 60 mins	**Practical (lectures per week) 60 mins**	**Tutorial (Hours per week)**	**Credit**	**Continuous Assessment (CA)**	**Semester End Examinations (SEE)**
2	-	-	2	40%	60%

Learning Objectives:

- To equip students with basic Mathematical and Statistical tools.
- To make the students aware of applications of Mathematical and Statistical Techniques in Business & Finance.

Course Outcomes:

After completion of the course, learners would be able to:

CO1: Define the concepts of probability and conditional probability and random variables and use these concepts in other fields.
CO2: Demonstrate the basic concepts of simple and compound interest
CO3: To apply Compound Interest and Annuities in solving real life problems
CO4: Apply the analytical techniques to solve annuity problems
CO5: Learn and apply probability distributions
CO6: Apply decision theory to select best action.

Outline of Syllabus: (per session plan)

Module	Description	No of Hours
1	**Interest and Annuity**	8
2	**Probability Distribution, Binomial Distribution**	7
3	**Poisson, Normal Distribution**	8
4	**Decision Theory**	7
	Total	**30**

Unit	Topic	No. of Hours/Credits
Module 1	**Interest and Annuity**	**8**
	Simple Interest, Compound Interest; Annuity Immediate and its Present value, Future value. Equated Monthly Installments (EMI) using reducing balance method & amortization of loans	
Module 2	**Probability Distribution, Binomial Distribution**	**7**
	Probability distribution of a discrete random variable; Expectation and Variance of random variable, simple examples on probability distributions, Discrete probability distribution, Binomial Probability distribution (Properties and applications only, no derivations are expected)	
Module 3	**Poisson, Normal Distribution**	**8**
	Poisson Distribution, Continuous Probability distribution: Normal Distribution. (Properties and applications only, no derivations are expected)	
Module 4	**Decision Theory**	**7**
	a) Basics of Decision Theory: Decision making situation, Decision maker, Courses of Action, States of Nature, Pay-off and Pay-off matrix; Decision making under uncertainty, Maximin, Maximax, Minimax regret and Laplace criteria. b) Decision making under Risk: Expected Monetary Value (EMV); Decision Tree; Expected Opportunity Loss (EOL),	