

Lesson Plan (Session 2023 – 2024)

Name of the Teacher: Dr. MONIA
Class and Section: M.Sc.1
Subject: Mathematics
Paper: Mathematical Statistics

JULY
Week 5 Chapter: Basics of Probability

AUGUST
Week 1 Chapter: Probability: Definition and various approaches of probability
Week 2 Chapter: Addition theorem, Boole's inequality
Week 3 Chapter: Conditional probability and multiplication theorem
Week 4 Chapter: Independent events, Mutual and pairwise independence of events
<i>Assignments:</i>
Week 5 Chapter: Bayes' theorem and its applications

SEPTEMBER
Week 1 Chapter: Random variable and probability functions: Definition and properties of random variables, Discrete and continuous random variables, Probability mass and density functions, Distribution function, Concepts of bivariate random variable: joint, marginal and conditional distributions.
Week 2 Chapter: Probability mass and density functions, Distribution function, Concepts of bivariate random variable: joint, marginal and conditional distributions
Week 3 Chapter: Mathematical expectation: Definition and its properties, Variance, Covariance
Week 4 Chapter: Moment generating function. Definitions and their properties
Week 5, Chapter: Test

OCTOBER
Week 1 Chapter: Discrete distributions: Uniform, Bernoulli,
Week 2 Chapter: Binomial Distribution
Week 3 Chapter: Poisson and Geometric distributions with their properties.
<i>Quiz:</i>
Week 4 Chapter: Continuous distributions: Uniform, Exponential and Normal distributions with their properties.
Week 5 Chapter: Test

NOVEMBER
Week 1 Chapter: Testing of hypothesis: Parameter and statistic, Sampling distribution and standard error of estimate
Week 2 Chapter: Null and alternative hypotheses, Simple and composite hypotheses, Critical region, Level of significance, One tailed and two tailed tests, Two types of errors
<i>Seminar:</i>
Week 3 Vacations (Diwali)
Week 4 Chapter: Tests of significance: Large sample tests for single mean, Single proportion, Difference between two means and two proportions

DECEMBER
Week 1 Revision
Week 2 Chapter: <i>Test and Assignment</i>