PDEA'S

MamasahebMohol College, Paud Road, Pune – 38

Computer Science Department

Course Name:CSST 122: Continuous Probability Distributions and Testing of Hypothesis, SEMESTER- II, PAPER II-(2 Credits, 40 lectures)

Course Outcomes: (CO 122)

Learning Outcomes	**Teaching learning strategies /Activities**	**Assessment tasks/tools**
Students will be able **CO122.1** To understand the use of continuous probability distribution in real life.	Lecture method, Problem solving sessions	TestExam
CO122.2 Apply the test procedure for a test of hypothesis concerning a population mean, proportion.	Lecture method , problem solving sessions	Test Exam, Assignment
CO122.3 Use a chi-square test to evaluate the fit of a hypothesized distribution..	Lecture method , problem solving sessions	Test Exam, Assignment
CO122.4 To understand the procedure for simulation.	Lecture method , problem solving sessions	TestExam

Course Specific Outcomes (CSO): Continuous Probability Distributions and Testing of Hypothesis

Course: Continuous Probability Distributions and Testing of Hypothesis	**Course Specific Outcomes CSO**	**Methodology**	**Reference Book**	**No.of Lectures**
Standard Continuous Probability Distributions: Uniform Distribution p.d.f., mean, variance, Exponential Distribution: mean, variance, lack of memory property. Normal Distribution: statement of p.d.f.,	To understand the use of continuous probability distribution in real life. Able to compute the expected value and variance.	Constructive	Fundamentals of Applied Statistics Gupta S. C. and Kapoor V. K.	10

standard normal distribution, independent normal variables, computations of probabilities using normal probability table, normal approximation to binomial and Poisson distribution,Numerical problems.				
Concepts related to testing of hypothesis Definitions: population, statistic, SRSWR, SRSWOR, random sample from a probability distribution, parameter, statistic, standard error of estimator. Concept of null hypothesis and alternative hypothesis, critical region, level of significance, type I and type II error.	To understand basic terms of testing of hypothesis. Develop the research skills.	Constructive	Fundamentals of Applied Statistics Gupta S. C. and Kapoor V. K.	4
Parametric Tests: Ho: $\mu = \mu o$ Vs H1: $\mu \neq \mu o$, $\mu < \mu o$, $\mu > \mu o$ (One sided and two sided tests) Ho: $\mu 1 = \mu 2$ Vs H1: $\mu 1 \neq \mu 2$, $\mu 1 < \mu 2$, $\mu 1 > \mu 2$ (One sided and two sided tests) Ho: P = Po Vs H1: P ≠Po, P < Po, P > Po (One sided and two sided tests) Ho: P1 = P2 Vs H1: P1≠P2, P1 < P2, P1 > P2 (One sided and two sided tests) Test based on F- distribution F-test for testing significance of equality of two population variances. Tests based on t – distribution Ho: $\mu 1 = \mu 2$ Vs H1: $\mu 1 \neq \mu 2$, $\mu 1 < \mu 2$, $\mu 1 > \mu 2$ (One sided and two sided tests) Paired t-test. Tests based on Chi square distribution Chi-square test for goodness of fit Test for independence of attributes (mxn and 2x2) Numerical problems related to real life situations.	Apply the test procedure for a test of hypothesis concerning a population mean, proportion. To understand inference for comparing means of two populations. Use a chi-square test to evaluate the fit of a hypothesized distribution.	Constructive	Fundamentals of Applied Statistics Gupta S. C. and Kapoor V. K.	20
Simulation: Introduction to Simulation, merits and demerits random number generator , Model Sampling from uniform and exponential distribution.,Box-Muller transformation. Numerical problems.	To understand the procedure for simulation. Know the use of simulation in real life.	Demonstrative	Fundamentals of Applied Statistics Gupta S. C. and Kapoor V. K.	6