

Progressive Education Society's
Modern College of Arts, Science and Commerce,
Shivajinagar, Pune - 5
M.Com. (Semester II)
(2023 Course under NEP 2020)

Course Code: 23CoStaP207

Course Name : Business statistics- I

Teaching Scheme: TH: 4 Hours/Week

Credit: 04

Examination Scheme: CIA: 50 Marks

End-Sem : 50 Marks

Prerequisite Courses:

- Basic concepts of mathematics.

Course Objectives:

On completion of the course, student will be able to–

1. demonstrate advanced understanding of the concepts of statistics and their applications to finance and other area.
2. understand the concept of random variable and develop problem solving techniques needed to calculate probabilities.
3. apply discrete and continuous distributions for analyzing the data.
4. describe the practical applications of various distributions.
5. understand problem of statistical inference, solve the problem testing of hypothesis with the help of software.
6. estimate characterizations of the population of particular interest.

Course Contents

Unit1	Revision of statistics	12 lectures
	• Measures of Central Tendency: mean, median and mode • Measures of Dispersion: Range, variance, standard deviation, coefficient of variation (C.V.) • Karl Pearson's coefficient of correlation, regression analysis.	
Unit 2	Theory of probability distributions and parameter estimation	18 lectures
	• Random Variables, discrete random variable, continuous random variable. • Probability distribution and probability mass function (p. m.f.) of discrete random variable, Probability density	

	function(p.d.f.) of continuous random variable • Expected value, variance and standard deviation Marginal, Joint and Conditional distribution • Numerical Problems on finding p.m.f/ p.d.f, expected value and variance. • Binomial Distribution: p.m.f., mean and Variance. • Poisson Distribution: p.m.f., mean and Variance • Uniform distribution : p.m.f., mean and variance • Normal Distribution: p.m.f., mean, variance, properties • Exponential distribution : definition, mean, variance and properties • Parameter and Statistic, Unbiased estimator. Confidence interval (around unbiased estimator) • Examples and Problems on real life situations	
Unit 3	Testing of Hypothesis	15 lectures
	• Hypothesis, null and alternative hypothesis, two types of errors, test statistic, critical region acceptance region, level of significance, p-value. • Large sample tests for population mean and population proportion. • Small Sample tests, Chi square test for goodness of fit and independence of two attributes.	
Unit 4	Analysis of variance and Design of Experiment	15 lectures
	• ANOVA: concept and technique of One way and Two way. • Basic terms of design of experiments: Experimental unit, treatment, layout of an experiment. • Completely Randomized Design (CRD) • Randomized Block Design (RBD) • Latin Square Design (LSD)	
Recommended Books : 1. Probability and Statistics : R Walpole, S myers and K Ye 2. Fundamentals of Mathematical Statistics :S.C. Gupta and V.K. Kapoor 3. Fundamentals of Applied Statistics : S.C. Gupta 4. Statistics for Businessand Economics :- I.S Chandran, Vikas Publishing, Mumbai 5. Quantitative Techniques forBusiness :- Dr. A.B. Rao,JaicoPublishing House,Mumbai 6. Statistics for management- T.N.Shrivastav(Tata McGraw hill company,Newdelhi) 7. Comprehensive statistical method- P.N. Arora, sumeetarora (S.chand& company Ltd.,New Delhi)		