

**D.K. GOVT. COLLEGE FOR WOMEN(AUTONOMOUS),
NELLORE.**



BOARD OF STUDIES

2017-18

DEPARTMENT OF STATISTICS

DK Govt. College for women(Autonomous),Nellore
CBCS SYLLABUS (Semester wise) 2016-17

BSC I YEAR : STATISTICS SYLLABUS
(With Mathematics Combination)

Semester - II CBCS (I Year)
Probability Distributions

Unit-I

Binomial Distribution: Definition, mean, variance and mode. Moment generating function (mgf), characteristics fuction (cf), cumulant generating function (cgf), additive reproductive property, recurrence relation for moments, probabilities. Negative Binomial Distribution: definition, mean and variance, m.g.f and limiting case of poisson distribution.

Unit-II

Poisson Distribution : Definition, mean, variance and mode. Moment generating function (mgf), characteristics fuction (cf), cumulant generating function (cgf), additive reproductive property, recurrence relation for moments, probabilities. limiting case of poisson distribution Geometric Distribution: definition, mean and variance, m.g.f and lack of memory property. Hyper Geometric Distribution : mean and variance only.

Unit-III

Rectangular distribution: Mean, variance, mean deviation, moment generating function. Exponential Distribution: Mean and variance, moment generating function, lack of memory. Cauchy Distribution: definitions, characteristic function and additive property.

Unit-IV

Beta Distributions of two kinds; Definitions of two kinds, mean and variance for two kinds. Gamma distribution; mean , variance, M.G.F, C.F, reproductive property, limiting case of Gamma distribution.

Unit - V Normal Distribution: Definition, Importance, Properties of Normal distribution, . Moment generating function (mgf), characteristics fuction (cf), cumulant generating function (cgf), additive reproductive property, Odd and even order moments of Normal distribution, QD: MD:SD:: 10:12:15, Area property and simple problems. ND as a limiting case of Binomial and Poisson distributions. 21

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CBCS SYLLABUS (Semester wise) 2016-17

BSC I I YEAR : STATISTICS SYLLABUS

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Semester –III CBCS (I I Year)

Paper – III Statistical Methods

Unit – I

Curve fitting: Method of least square – Fitting of linear, quadratic, Exponential and power curves and their problems. Attributes: Introduction, Nature, and consistency and mention its conditions. Independence and association of attributes, co-efficient of association, coefficients of contingency and their problems

Unit-II

Correlation: Def., scatter diagram, its coefficient and its properties. , scatter diagram, computation of correlation coefficient for ungrouped data. Spearman's rank correlation coefficient, properties of spearman's correlation coefficients and problems.

Unit-III Regression:simple linear regression, properties of regression coefficients and and Regression lines and their problems. Concept partial and multiple correlation coefficients, and their problems.

Unit-IV

Problem of estimation: Concept of population, Parameter, random sample, statistic, Estimation of a parameter, criteria of a good estimator – unbiasedness, consistency, efficiency, & sufficiency and. Statement of Neyman's factorization theorem.

Unit –V

Methods of Estimation : Estimation of parameters by the methods of moments and maximum likelihood (M.L), properties of MLE's. Binomial, Poisson & Normal Population parameters estimate by ML method. Confidence intervals of the parameters of normal population.

Text books

1. BA/BSc II year statistics – statistical methods and inference – Telugu Academy by A.Mohanrao, N.Srinivasa Rao, Dr R.Sudhakar Reddy, Dr T.C. Ravichandra Kum.
2. B.A/B.Sc. Statistical Methods ,B.V.L.N.Jogi Raju,Kalyani Publications
3. Fundamentals of Mathematics statistics: VK Kapoor and SC Guptha.

Reference Books:

1. Outlines of statistics, Vol II : Goon Guptha, M.K.Guptha, Das Guptha B.
2. Introduction to Mathematical Statistics : Hoel P.G.

Practical – Semester –III

Conduct any 6 (Ms-excel is compulsory)

1. Fitting of straight line.
2. Fitting of exponential curves.
3. Fitting of power curve.
4. Computation of correlation coefficient
5. Fitting of Regression lines.
6. Rank correlation coefficient.

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CBCS SYLLABUS (Semester wise) 2017-18

BSC I YEAR: STATISTICS SYLLABUS

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Semester – IV CBCS (II Year)

Paper – II : Statistical Hypothesis and Tests of Significance

UNIT-I

Concepts of Statistical hypothesis: Null and alternative hypothesis, critical region, two types of errors, level of significance, power of a test. 1 tailed, 2 tailed tests, Neyman – Pearson's lemma. Examples in of Binomial. Poisson, Normal distributions.

UNIT II

Exact sampling distributions: sampling distribution, standard error. Statement and Properties of χ^2 , t, F distributions and their interrelationships

Unit-III

Large Sample Tests: Large sample tests for single mean, two means, Single proportion, two proportions, Standard Deviation of single and double samples and Fisher's Z transformation.

Unit-IV

Small sample tests: Tests of significance based on χ^2 , t and F. χ^2 -test for test for independence of attributes, t-test for single, double and paired tests, Variance Ratio Test(F-test).

Unit-V

Non-parametric tests – Advantages and Disadvantages. Two sample run test, Two sample Median test and Two sample sign test.

TEXT BOOKS

1. BA/BSc II year statistics – statistical methods and inference – Telugu Academy by A.Mohanrao, N.Srinivasa Rao, Dr R.Sudhakar Reddy, Dr T.C. Ravichandra Kumar.
2. B.A/B.Sc. Statistical Inference ,B.V.L.N.Jogi Raju,Kalyani Publications