S.K.S.D. Mahila Kalasala (U.G&P.G.) (A),Tanuku-534211(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

B.Sc I YEAR: STATISTICS SYLLABUS w.e.f. 2020-2021

I SEMISTER

PAPER – I Descriptive Statistics and Probability

Unit- I

Introduction to statistics : Origin, Development, Definition, Uses and Limitations (Nature and scope) of Statistics. Concepts of Primary and Secondary data. Methods of collection and editing of primary data. Desigining a questionnaire and a schedule. Measures of Central Tendency – Mean, Median, Mode, Geometric Mean and Harmonic Mean.

Additional Input: Diagrammatic and Graphical presentation of data.

Unit- II

Measures of dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation. Central and Non- Central moments and their interrelationship. Sheppard's correlation for moments. Skewness and kurtosis.

Unit- III

Introduction to Probability : Basic Concepts of Probability, random experiments, trial, outcome, sample space, event, mutually exclusive and exhaustive events, equally likely and favourable outcomes. Mathematical, Statistical, axiomatic definitions of probability. Conditional Probability and independence of events. Addition and multiplication theorems of probability for 2 and for n events. Boole's inequality and Baye's theorems and problems based on Baye's theorem.

Unit - IV

Random Variables : Definition of random variable, discrete and continuous random variables, functions of random variable. Probability mass function. Probability density function, Distribution function and its properties. Bivariate randam variable – meaning, joint, marginal and conditional Distribution, independence of random variables.

Additional Topics are included only for basic Idea & Project

S.K.S.D. MAHILA KALASALA, UG & PG (A), TANUKU

(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

B.Sc., I YEAR: STATISTICS SYLLABUS w.e.f. 2019-2020

I SEMISTER Practicals

Practicials – Semester - I

1. Diagrammatic representation of data (Bar and Pie)
2. Graphical representation of data (Histogram, Frequency polygon, Frequency curves, Ogives)
3. Computation of Mean , Median , Mode
4. Central and Non central moments and Sheppard's corrections for moments.
5. Measures of Skewness and Kurtosis.
6. MS-Excel methods for the above Serial Numbers 1,2,4.

Note:

1. MS-Excel methods to be made mandatory for all the Semesters after proper training only to the teaching staff by the University concerned.

Reference Books (W.M.):

1. Introduction to probability – Charles M. Grinstead, J. Laurie Snell.
2. Fundamentals of Mathematical Statistics by VK Kapoor & S.C. Gupta
3. Fundamentals of Statistics – Goon Gupta, Das Gupta
4. Sambavyatha avadi Sidhantam – Telugu Academy
5. Hoog. Taims Rao: Probability and Statistical Inferences 7th edition Pearson.
6. BA/BSc I year statistics – descriptive statistics, probability distribution – Telugu Academy – Dr. M. Jaganmohan Rao, Dr. N. Srinivasa Rao, Dr. P. Tirupathi Rao, Smt. D. Vijaya Lakshmi

S.K.S.D. MAHILA KALASALA, UG & PG (A), TANUKU

(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

BSC II YEAR : STATISTICS SYLLABUS

Semester - III CBCS

Paper - III Statistical Methods
w.e.f.2019-2020

Unit-I

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

Additional Input: Probable error.

Unit-II

Regression: simple linear regression, properties of regression coefficients. Regression lines, Concept of Correlation ratio, partial and multiple correlation coefficients, correlation verses regression and their problems .

Curve fitting : principles of Least squares, Method of least square - Fitting of linear, quadratic, Exponential and power curves and their problems

Additional Input: Method of studying regression.

Unit-III

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 –IV

Exact sampling distributions: Concept of population, Parameter, random sample, Need of taking sample, concept of sampling, Sample Vs. Census statistic, sampling distribution, standard error. Statement and Properties of $\chi 2$, t, F distributions and their inter relationships.

.

S.K.S.D. MAHILA KALASALA, UG & PG (A), TANUKU

(Affiliated to Adikavi Nannaya University, Rajamahendravaram

STATISTICS METHODS

PRACTICAL SEMESTER – III

(w.e.f.2019-2020)

Conduct any 6 (Ms-exel is compulsory)

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

MS-Excel methods any for the Serial Numbers 1,2,4,5

S.K. S. D. Mahila Kalasala (U.G&P.G.) (A),Tanuku-534211

(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

III B.Sc., STATISTICS SYLLABUS (w.e.f.2017-18)

Semester-V

Paper - V : Sampling Techniques and Design of Experiments

Unit-I

Sampling Theory: Principle steps in a sample survey, Censes versus sample survey,sampling and Non-sampling errors. Types of sampling - subjective, probability and mixed sampling methods.

Unit-II

Simple Random Sampling : Meaning of Samples and methods to draw, estimation ofpopulation mean, variances in SRSWR& SRSWOR. Advantages and Disadvantages of thesemethods.

Unit-III

Stratified Random sampling: Proportional and optimum allocation of sample sizesin stratification. Variances of these methods. Comparison of their relative efficiencies. Advantages and Disadvantages of stratified sampling. concept of systematic sampling Advantages and disadvantages.

Unit-IV

Analysis of Variance:Causes of variation, Statement of Cochran's theorem,One -way with equal and unequal classifications and two way classifications.

Design of Experiments: Principles of experimentation in Designs, analysis ofcompletely randomised design (CRD), Randomised block design (RBD) and Latin square design (LSD),efficiency of these designs. Concept of Factorial experiments.

Text Books:

1.TeluguAcademyBA/BSc III year paper - III Statistics - applied statistics - Telugu academy by
prof.K.SrinivasaRao, Dr D.Giri. Dr A.Anand, Dr V.PapaiahSastry.
K.V.S.Sarma Statistics Made Simple: Do it yourself on PC. PHI.

Reference Books:

1.Fundamentals of applied statistics : VK Kapoor and SC Gupta.
2.AnuvarthitaSankyakaSastram - Telugu Academy.

S.K. S. D. Mahila Kalasala (U.G&P.G.) (A),Tanuku-534211

(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

III B.Sc., : STATISTICS PRACTICAL SYLLABUS (w.e.f.2017-18)

Semester-V

Paper - V : Sampling Techniques and Design of Experiments

Practicals Semester – V Conduct any 6 (Ms-exel is compulsory)

1. Estimation of population Mean, variance by SRSWOR.
2. Estimation of population Mean, variance by SRSWR.
3. ANOVA One –way classification.
4. ANOVA-CRD.
5. ANOVA - RBD.
6. ANOVA - LSD.
7. Ms-excel methods for the above serial numbers 4,5,6(any one)

S.K. S. D. Mahila Kalasala (U.G&P.G.) (A),Tanuku-534211

(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

III B.Sc., : STATISTICS SYLLABUS (w.e.f.2017-18)

Semester-V

Paper - VI : Quality and Reliability

Unit-I Importance of SQC in industry, statistical basis of shewart control charts, usesof control charts., control limits, Natural tolerance limits and specification limits.concept of six-sigma

Unit – II

Variable Control Chart: Construction of mean , R ,s.d,charts for variables,Interpretation of control charts

Attribute control charts- nP, P charts, C chart, Interpretation of

control charts.

Unit-III

Acceptance sampling plans: Scope, Producer's risk and consumer's risk . Conceptsof AQL and LTPD.

Unit-IV

Sampling Plans: Single and double sampling plans, OC and ASN functions, Doubleand single Sampling plans for attributes using Binomial.

Unit-V Reliability: Introduction, failure rates, Hazard function, estimation ofreliability, exponential distribution as life model, its memoryless property.

Text Books:

1.BA/BSc III year paper - IV Statistics - applied statistics - Telugu academy by Prof.K.SrinivasaRao, Dr D.Giri. Dr A.Anand, Dr V.PapaiahSastry.

2. Fundamentals of applied statistics : VK Kapoor and SC Gupta

1. S.K Sinha: Reliability and life testing. Wiley Eastern.

S.K. S. D. Mahila Kalasala (U.G&P.G.) (A),Tanuku-534211
(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

III B.Sc., : STATISTICS PRACTICAL SYLLABUS (w.e.f.2017-18)
Semester-V

Paper - VI : Quality and Reliability

Practical's - Semester – V Conduct any 6 (Ms-excel is compulsory)

1Construction of(mean ,R) charts.

2.Construction of P-chart-Fixed sample size.
3. Construction of P-chart-variable Sample size
4. Construction of nP-Chart .

5.Construction of C-Chart.

6.MS-Excel methods for the Serial Numbers 1.

7.MS-Excel methods for the Serial Numbers 2 to 4.(any one)