

M.V.R. DEGREE COLLEGE

(UG And PG Courses)

(Affiliated to Andhra University)

An Institution of Priyadarshini Educational Academy

NAAC ACCREDITED COLLEGE

Dr.V.Rama Rao, M.A.,Ph.D.,
Secretary & Correspondent

Dr.A.Balakrishna,M.Sc.,Ph.D.,
Principal

Department of Statistics

Bachelor of science (B.Sc.- M.P.S. and M.S.CS.)

APSCHE, Revised CBCS Frame work

w.e.f.2020-2021(revised in April 2020)

Course Outcomes (Cos) for Statistics

Course Code	Title of the Paper	Course Outcomes
Course-1 (Theory)	Descriptive Statistics	CO1: Meaning, importance of statistics in different fields. CO2: Concept of Primary and Secondary data. CO3: Measures of central tendency, dispersion CO4: Knowing about moments, skewness and its measures, kurtosis and its types. CO5: Definition of bivariate data, principle of least squares. CO6: Fitting of Straight-line, Second degree parabola, Power curve, Exponential curve related with bivariate data using least squares method. CO7: Meaning, definition, types and uses of correlation. Measures of correlation. Coefficient. CO8: Linear regression, regression lines, regression coefficients its properties. CO9: Knowing about notation, class, order of frequencies, ultimate class frequencies related with qualitative data. CO10: Contingency table and measurement of different coefficients of contingency.
Course-1 (Practical)	Descriptive Statistics	Students be able to apply theoretical/analytical/statistical knowledge gained in various courses of B.SC to solve averages, dispersion, moments, correlation, regression and contingency problems based on real life situations



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Course Code	Title of the Paper	Course Outcomes
Course-2 (Theory)	Probability Theory and Distributions	<p>CO1:Knowing basic concepts of Probability, Definition of Probability, random experiments, trial outcome, and event.</p> <p>CO2:Theorems of probability-Addition, Multiplication, Baye's theorem and their applications in real life problems..</p> <p>CO3:Definition of random variable, discrete and continuous random variable. Bivariate random variable meaning, and Problems on them.</p> <p>CO4:Definition of mathematical expectation in discrete and continuous case with examples.</p> <p>CO5:M.G.F, P.G.F, C.F, C.G.F and their properties. Chebyshev's and Cauchy Schwartz inequality and problems on them.</p> <p>CO6: Definition and applications of Binomial, Poisson, Negative Binomial, Geometric, Hyper Geometric. Distribution.</p> <p>CO7:Limiting cases of these distributions wherever exists.</p> <p>CO8:Definition of rectangular, exponential, Gamma, Beta distributions and problems on them and their applications.</p> <p>CO9:Normal distribution definition its properties. .</p> <p>CO10:Importance of this distribution and problems of normal distribution related with real life examples.</p>
Course-2 (Practical)	Probability Theory and Distributions	<p>Use Binomial, Poisson, Geometric, exponential and normal distribution to solve statistical problems. Use different distributions to solve simple practical problems. Analyze Statistical data using MS-Excel.</p>



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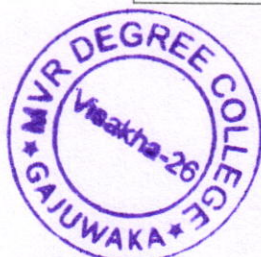
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Course-3 (Theory)	Statistical Inference	<p>Co1:Definitions of Sample population...., Central Limit Theorem.X^2, t and F Distribution and its properties.</p> <p>Co2:Characterstics of a good estimator, Cramer Rao Inequality.</p> <p>Co3: Obtain BCR for testing $H_0: \mu = \mu_0$ Against $H_1: \mu = \mu_1$ for the normal population.</p> <p>Co4: State and Prove Neymann Pearson's lemma.</p> <p>Co5: Explain large sample test for difference of standard deviations.</p> <p>Co6: Explain large sample test for difference of proportions.</p> <p>Co7: To find the χ^2 test for goodness of fit.</p> <p>Co8: Explain t-test for difference of means.</p> <p>Co9: Define non-parametric test and give its advantages and disadvantages.</p> <p>Co10: Explain sign test and Median test.</p>
Course-3 (Practical)	Statistical Inference	In this paper we find the unknown parameters by using large sample tests and small sample tests. By using large sample tests and small sample tests we can estimate future values and data approximately.
Course-4 (Theory)	Sampling Techniques and Designs of Experiment	<p>Co1:Definition of Simple Random Sampling and its cases(SRSWR, SRSWOR)</p> <p>Co2: Theorem like $E(\bar{y}_n) = \bar{Y}_n$, $V(\bar{y}_n) = (N-n/Nn)S^2$ in SRSWR. Theorem like $E(\bar{y}_n) = \bar{Y}_n$, $V(\bar{y}_n) = (N-1/Nn)S^2$ in SRSWR.</p> <p>Co3: Explanation of Stratified Random Sampling. Notations . Proportional and Optimum allocation.</p> <p>Co4: Theorem $V(\bar{y}_n)_{OPT} \leq V(\bar{y}_{st})_{prop} \leq V(\bar{y}_n)_{SRS}$</p> <p>Co5: Definitions, notations of Systematic Sampling. Theorem $V(\bar{y}_{sys})$,</p> <p>Co6: $V(\bar{y}_{st}) \leq V(\bar{y}_{sys}) \leq V(\bar{y}_n)R$ for knowing the efficiency of which sampling is better.</p> <p>Co7: Meaning, Definition, Assumptions of ANOVA</p>



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Course-5 (Theory)	Applied Statistics	<p>Co1: Meaning, definition, uses of time series,. Components of time series how it is used in business. Separation (Decomposition of time series) to study 4 Components separately and analyzing them.</p> <p>Co2: Know the methods of computing trend component,</p> <p>Co3: Seasonal Components and its determination by different methods.</p> <p>Co4: Growth curves and its determination by different methods.</p> <p>Co5: Meaning, definition and uses, limitations, problems involved in construction of index numbers.</p> <p>Co6: Types of index numbers and methods involved in constructing the types of index numbers.</p> <p>Co7: Criteria of good index numbers. Fixed, Chain base index numbers.</p> <p>Co8: Meaning, definition, uses and sources of vital statistics for knowing about vital events of mankind.</p> <p>Co9: Various deaths, birth rates used for determination of the population of a Country.</p> <p>Co10: Measurement of rate of growth of population by knowing birth and death rates to know about population of a country by using different methods. Reproduction rates, GRR, NRR used as a source of determine the exact population of a country. Lifetables</p>
Course-5 (Practical)	Applied Statistics	<p>In this we learn real life applications of statistics like time series, index numbers, vital statistics, birth rates, death rates, population growth, net reproduction rates and gross reproduction rates. These all are used in our daily life.</p>



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		<p>technique. One-way and two way classification of data with real life examples for conclusion of data.</p> <p>Co8: Principles of Designs of Experiment.</p> <p>Co9: Statistical Analysis of CRD,RBD and LSD with real life examples problems. Relative efficiency of RBD over CRD, LSD over RBD,CRD.</p> <p>Co10:Factorial experiment and their statistical analysis.</p>
Course-4 (Theory)	Sampling Techniques and Designs of Experiment	<p>Co1:Definition of Simple Random Sampling and its cases(SRSWR, SRSWOR)</p> <p>Co2: Theorem like $E(\bar{y}_n) = \bar{Y}_n$, $V(\bar{y}_n) = (N-n/Nn)S^2$ in SRSWR. Theorem like $E(\bar{y}_n) = \bar{Y}_n$, $V(\bar{y}_n) = (N-1/Nn)S^2$ in SRSWR.</p> <p>Co3: Explanation of Stratified Random Sampling. Notations . Proportional and Optimum allocation.</p> <p>Co4: Theorem $V(\bar{y}_n)_{OPT} \leq V(\bar{y}_n)_{prop} \leq V(\bar{y}_n)_{SRS}$</p> <p>Co5: Definitions,notations of Systematic Sampling. Theorem $V(\bar{y}_{sys})$,</p> <p>Co6: $V(\bar{y}_{st}) \leq V(\bar{y}_{sys}) \leq V(\bar{y}_n)R$ for knowing the efficiency of which sampling is better.</p> <p>Co7: Meaning, Definition, Assumptions of ANOVA technique. One-way and two way classification of data with real life examples for conclusion of data.</p> <p>Co8: Principles of Designs of Experiment.</p> <p>Co9: Statistical Analysis of CRD,RBD and LSD with real life examples problems. Relative efficiency of RBD over CRD, LSD over RBD,CRD.</p> <p>Co10:Factorial experiment and their statistical analysis.</p>
Course-4 (Practical)	Sampling Techniques and Designs of Experiment	<p>In this sampling theory we can draw samples by using different sampling techniques like simple random sampling, stratified random sampling, systematic sampling etc. we can apply this sampling theory in our daily life. By using anova techniques the designs of experiments CRD,RBD and LSD, Factorial experiment conclusions can be given basing on Hypothesis for decision making of the experiments.</p>

