5th Semester	RAG5D004	Application of Statistical Methods	L-T-P 3-0-0	3 CREDITS

Module I **(7 Hours)**

Introduction, types of data, quantitative and qualitative; discrete and continuous variables, frequency distribution table - construction, number and length of classes; measures of central tendency, probability; average, different measures, Arithmetic Mean, Median, Mode, Geometric mean and Harmonic mean for grouped and ungrouped data; Distribution - different measures (absolute & relative); range, quartile deviation, mean deviation Standard Deviation (SD), Variance and Coefficient of Variation. Probability-definition, concept, Random Variable: Concept random variable and Expectation.

Module II **(6 Hours)**

Construction of Frequency Distribution Tables and Frequency Curves; Computation of Arithmetic Mean, Median and Mode for grouped and un-grouped data; Computation of Harmonic and Geometric Mean; Computation of SD, Variance and Coefficient of Variation for un-grouped and grouped data

Module III **(6 Hours)**

Simple linear Correlation- Concept, Definition, types and its properties; Simple linear Regression - Concept, definition, properties , Normal Distribution, Standard Normal Distribution (SND): Properties including area under the curve (without Proof) , Binomial Distribution and Poisson distribution - definition, density function and properties.

Module IV **(6 Hours)**

Computation of skewness and kurtosis; Standard Normal Distribution (SND) test for single sample mean (population SD known and unknown); Standard normal distribution test for two samples means (population SD known & unknown); Computation of Binomial Distribution, computation of Poisson Distribution: Correlation coefficient and its testing

Module V **(6 Hours)**

Sampling and Testing of Hypothesis - null hypothesis, types of hypothesis, level of significance, degrees of freedom: statistical errors; Large Sample test (Z-test); Small Sample t-test (one sample, two samples and paired tests; F-test for testing of significance of variances; Chi-square test: Goodness of fit &testing of independence of attributes (2x2 Contingency table).

Module VI **(7 Hours)**

Computation of Binomial Distribution , computation of Poisson Distribution:Correlation coefficient and its testing; calculation of correlation coefficient and its testing, calculation of regression coefficient and regression line, Student's t-test for single sample mean;t-test for two samples means; paired t-test; F-test for equality for two sample variance test; computation of Chi-square test: Goodness of fit, testing of independence of attributes (2x2 Contingency table) and mxn

Books

1. Chandel SRS. A Hand book of Agricultural Statistics. Achal Praskasam Masndir, Kanpur
2. Rangaswamy R. A Text Book of Agricultural Statistics. New Age Int. publications Ltd.
3. Agrawal B L. Basic Statistics. Wiley Eastern Ltd. New Age International Ltd.
4. Nageswara Rao G. Statistics for Agricultural Sciences. BS Publications.
5. Gupta S.C. & Kapoor V. K Fundamental Applied Statistics. Sultan Chand & Sons.
6. Gupta S.C. & Kapoor V. K. Fundamentals of Mathematical Statistics. Sultan Chand & Sons.

Digital Learning Resources

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