Research Methodology

Course Code: STAT 600   **Total Credit: 4+0**

Types of statistical data: primary and secondary data, Classification, Tabulation and Diagrammatic representation of data, Frequency Distribution, Cumulative Distribution and their graphical representation, Histogram, Frequency Polygon, Frequency Curve and Ogive

Measures of central tendency: Arithmetic geometric and harmonic mean, median, mode, quartiles and percentiles.

Measures of dispersion: Mean Deviation, Variance, moments, skewness and kurtosis and their measures based on quantiles and moments

Correlation Coefficient and its Properties, Spearman's Rank Correlation Coefficient, Correlation and Regression Analysis

Concept of probability and probability distributions, Properties of Binomial and Normal distributions

Testing of Hypotheses: Null and Alternative hypotheses, Types of Errors, Critical Region, Level of Significance, Power and p-values, Exact tests of hypotheses under Normal set-up for a single mean, a single variance, the equality of two means and the equality of two variances

Chi square test for contingency table

Analysis of Variance: One way and two-way classification.

Note: Upto 25% lectures can be subject/department specific and can be taken by respective departments.