Course Code: 12BB12C2

Course title: Business Statistics

Objectives: To learn and understand the basic statistics involved in data presentation, to identify the influencing factors or determinants of research parameters and to test the significance, validity and reliability of research results.

Course Curriculum:

Unit I: Statistical description of data and Measures of Central Tendency and Dispersion: Textual, Tabular & Diagrammatic representation of data: Classification and tabulation of data-Frequency Distribution - Graphical representation of frequency distribution – Bar chart, Pie chart, Histogram, Frequency Polygon, Ogive – Descriptive statistics: Measures of central tendency, Partition Values. Measures of dispersion; Skewness and Kurtosis.

Unit II: Elementary Probability Theory: Concepts of Probability: Random Experiment – Sample Space – Events and their types, Classical definition of Probability, Combinatorial Analysis – Addition and Multiplication Theorems (without proofs) – Independence of events – Bayes Theorem – Marginal and conditional Probability – Random variable – Probable Distribution of a discrete random variable – Expectations and variance. Concept of Probability Distribution Function – Binomial, Poison and Normal Distribution and Standard Normal Distribution – Simple Examples – Central limit theorem.

Unit III: Sampling: Preliminary Concepts – Population – Sample -Parameter – Statistic attribute – Types of samples – Sampling methods – Sampling Distribution – Mean and Standard of the Sampling Distribution: t –Distribution – Interval Estimation for population mean-Determining the sample size.

Unit IV: Testing of Hypothesis: Developing null and Alternative Hypothesis. Basic Concepts of Hypothesis Testing: Procedure of testing hypothesis. T- Test, Z-test, F-test and Chi-Square test. ANOVA.

Unit V: Correlation and Regression and Index Numbers: Simple and Partial Correlation – Regression analysis – Simple linear Regression Model – Estimating the Regression equation – Methods of least squares – Standard error of the Estimates – Interpreting the standard error of the estimate and finding the confidence limits for the estimates, correlation and regression - coefficient of determination – Multiple Regression analysis-Time series analysis: components of a time series.

Recommended Text Book(s):

- 1. Anderson, Sweeney, Williams, *Statistics for Business and Economics*, 9th edition, Cengage Learning, 2001.
- 2. S.C.Gupta, **Fundamentals** *of Statistics*, Himalaya Publishing House, 17th edition, Mumbai, 2010.

Reference Books:

- 1. S.C.Gupta & V.K.Kapoor, *Fundamentals of Mathematical Statistics*, S.Chand, 2006, 5th edition, New Delhi
- 2. Bhardwaj, *Business Statistics*, Excel Books, 1st edition, New Delhi, 2009.
- 3. Richard Levin, David S.Rubin, *Statistics for Management*, Prentice Hall of India, 7th edition, New Delhi, 2008.