COURSE 8: BUSINESS STATISTICS AND MATHEMATICS

Theory   Credits: 4   4 hrs/week

Course Objectives:

- Understand the importance of Statistics in real world business applications.

- Formulate complete, concise and correct mathematical proofs.

- Frame problems using multiple mathematical and statistical tools, measuring relationships by using standard techniques.

- Build and assess data-based models, learn and apply the statistical tools to business.

- Create quantitative models to solve real world problems in appropriate contexts.

UNIT I: INTRODUCTION TO BUSINESS STATISTICS

Meaning, definition, functions, importance and limitations of Statistics in business context. Methods of Data Collection– Primary and Secondary data. Tools for Data Collection – Schedule and questionnaire. Frequency distribution, Tabulation of Data , Diagram and graphic presentation of data. Statistical System in India.

UNIT II: MEASURES OF CENTRAL TENDENCY AND DISPERSION

Definition, objectives and characteristics of Measures of Central Tendency – Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean. Median, Mode, Quartiles, Deciles and percentiles. Properties of averages and their application. Meaning, definitions, objectives of Dispersion, Range Quartile Deviation, Mean deviation, Standard Deviation. Co-efficient of variation. Definition and objectives of Skewness – Karl Pearson's and Bowle's measures of skewness.

UNIT III: MEASURES OF CORRELATION

Meaning, Definition and use of correlation. Types of Correlation- Karl Pearson's correlation coefficient, Spearman's Rank correlation. Probable error , Meaning and utility of Regression Analysis, comparison between Correlation and Regression, Regression Equations, Interpretation of Regression Co-efficients.

UNIT IV: SET THEORY

Set, Subset, Types of Sets. Operations on sets, De Morgan's Law of Venn Diagram. Applications of Set theory. Laws of Indices, Arithmetic Progressions, Geometric Progressions, Harmonic Progressions.

UNIT V: MATRIX

Meaning and operations, Matrix Algebra. Types of matrices, Matrix addition, Matrix Multiplication. Matrix Determinants, Minors and Co-factors , Matrix inversion.

Reference Books:

1. Sivayya K. V. and Satya Rao, Business Mathematics, Saradhi Publications, Guntur.

2. Sancheti and Kapoor V K., Business Mathematics, Sultan Chand & Sons, New Delhi.

3. D. N. Elhance: Fundamental of Statistics, Kitab Mahal, Allahabad.

4. Gupta S.C. Fundamentals of Business Statistics, Sultan Chand, New Delhi.

5. Aggarwal, Business Statistics, Kalyani Publishers, Hyderabad.

6. Reddy C R, Business Statistics, Deep & Deep Publications, New Delhi.