

Business Statistics

Semester II

Subject Code: BB21505

Lectures : 48

Objectives:

- The syllabus aims in equipping students with
- The knowledge of statistical concepts that help in decision making.
- The concept of average and estimation which would help them in business forecasting.
- Knowledge in Operations Research.
- A culture of informed decision making using statistical models.
- Balanced knowledge of theory as well as practical aspects of the subject.

Unit 1: Population and Sample

10
Lects.

- Definition of Statistics, Scope of Statistics in various other subjects. Concept of raw data, attributes, variables, population, sample, statistical error (residual), real life applications. 02
- Methods of Sampling- Probabilistic and Non-Probabilistic. 01
- Data condensation, classification, frequency distribution and cumulative frequency distribution 02
- Graphs- Histogram, Frequency Polygon, Ogives (Less Than and More Than type). Determination of Median and Mode graphically. 05
Diagrams- Line graph, Bars, Multiple Bars, Subdivided Bars, Component Bar Charts, Horizontal Bars, Pie Chart.
- Numerical Problems.

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Unit 2: Measures of Central Tendency and Dispersion

12
Lects.

- Concept of Central Tendency. Criteria for Good Measures of Central Tendency. Arithmetic Mean- Concept, Simple and Weighted Mean for Grouped and Ungrouped Data, Important Properties of Arithmetic Mean, Missing Frequency, Mean of Composite Group, Merits and Demerits. 03
- Median – Concept, Calculation from Simple Series, Simple Frequency Distribution, Grouped Frequency Distribution and by Graphical Method, Missing Frequency, Advantages and Disadvantages. 02
- Mode – Concept, Calculation from a Simple Series, Simple Frequency Distribution, Grouped Frequency Distribution and by Graphical Methods. Advantages and Disadvantages. 02
- Concept of Dispersion – Meaning and Necessity of Measures of Dispersion, Absolute and Relative Measure of Dispersion. Range – Concept, Coefficient of Range, Merits and Demerits, Uses. 01
- Standard Deviation – Concept of Standard Deviation and Variance, Important Properties, Calculation from Simple Series, Simple Frequency Distribution and Grouped Frequency Distribution, Standard Deviation of Combined Group. 02
- Coefficient of Variation, Quartile Deviation, Coefficient of Quartile Deviation. 02
- Numerical Problems.

Unit 3: Correlation and Regression (for Ungrouped Data)

12
Lects.

- Concept of Correlation, Bivariate Data, Scatter Diagram, Positive and Negative correlation. Difference between Correlation and Regression. 02
- Covariance, Karl Pearson's Coefficient of Correlation, Properties of Correlation Coefficient, Interpretation and Use of Correlation Coefficient. 04
- Meaning of Regression, Two Regression Equations, Regression Coefficients, Properties of Linear Regression. 04
- Rank Correlation, Spearman's Formula for Rank Correlation Coefficient, Uses. 02
- Numerical Problems.

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Unit 4: Index Numbers

06
Lects.

- Definition of Index Number. Characteristics and Uses of Index Numbers. 01
- Methods of Construction of Index Numbers – Aggregative Method and Relative Method, Types of Index Numbers- Price Index, Quantity Index and Value Index – Laspeyres' Index, Paasche's Index, Edgeworth-Marshall's Index, Fisher's Ideal Index, Bowley's Index, Walsh's Index, Kelly's Index. 04
- Cost of Living Index Numbers. Problems in the construction of Index Numbers. 01
- Numerical Problems.

Unit 5: Simulation Techniques

08
Lects.

- Introduction to Simulation, Meaning and Concept of Simulation, Merits and Demerits. 01
- Random Numbers- Definition, Uses, 01
- Pseudo-Random Number Generators, Requisites of a Good Random Number Generator. 02
- Monte Carlo Simulation. 04
- Numerical Problems.

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Recommended Text Books :

- Statistical Methods – S.P.Gupta, Sultan Chand,2005
- Statistics for Management - Richard I Levin and David S Rubin, Prentice Hall of India,1997
- Business Statistics – S.P.Gupta and M.P.Gupta, Sultan Chand,2008
- Statistical and Quantitative Methods – Ranjeet Chitale, Nirali Prakashan,2009
- Operations Research , Theory and Applications - J K Sharma, Macmillan Publishers,2009

Recommended Reference Books :

- Advanced Statistics – Gupta & Kapoor, Sultan Chand,1987
- Fundamentals of Statistics Volume-I & II – Goon , Gupta, Dasgupta, World Press, Calcutta,1986
- Operations Research, An Introduction - Hamdy A Taha, Pearson,2004
- Operations Research – S.D.Sharma , Kedar Nath Ram Nath & Co Publishers,2003

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