17MB107 BUSINESS STATISTICS

Course Description and Objective:
The objective of this course is to provide the basic knowledge of the various statistical techniques useful to managers in their decision-making. Students will learn statistical tools like measures of central tendency, dispersion, Regression and Correlation analysis, sample tests and Hypothesis testing.

Learning outcomes:
The focus is on the use of statistical techniques to describe the data, thereby enabling the student to

1. Define statistics, become aware of wide range of applications in statistics, types of data, tabulation of data, construct a histogram, frequency polygon, an ogive, pie chart,
2. Apply various measures of central tendency –mean, median, mode, GM and H.M for grouped and ungrouped data. Apply various measures of variability-range, MD,QD, standard deviation, and to know percentiles, Deciles.
3. Understand the concepts of probability and its applications in business
4. Understand the various discrete and continuous probability distributions
5. Understand the concepts of various decisions making environments and its uses in solving business decision making process.

UNIT-I

Introduction to statistics: Introduction, why statistics is important for managers, why we need data, levels of measurement, basic statistical concepts, population and sample, descriptive and inferential statistics, parameter and statistic. Charts and graphs: frequency distribution, Graphical presentation of data,

UNIT-II

Measures of central tendency: Introduction, central tendency, measures of central tendency, Mathematical averages: arithmetic mean, geometric mean, harmonic mean. Positional averages: median, mode, quartile, deciles, percentiles.

Measures of Dispersion: Introduction, measures of dispersion, methods of measuring dispersion: Range, inter quartile range, mean deviation, standard deviation.

UNIT-III

Probability: Introduction to probability, concept of probability, basic rules, counting rules, probability assigning techniques: Classical technique, relative frequency technique, subjective approach, types of probability: marginal probability, union probability, joint probability, conditional probability, Bayes' theorem.

UNIT-IV

Discrete and continuous probability distributions: Introduction, difference between discrete and continuous random distributions, Discrete probability distributions: Binomial distribution, Poisson distribution: Continuous distribution: Normal distribution.

UNIT-V

Statistical decision theory: Introduction, elements of decision analysis, Decision making under uncertainty: Laplace criterion, Maximin and Minimax criterion, Maximax and Minmin criterion, Hurwicz criterion, regret criterion, Decision making under risk: EMV, EOL, and EVPI.

Skill Development:
(*These activities are only indicative; the Faculty member can innovate*)

1. Collect statistical information's from Magazines, Newspapers, Television, Internet etc.,
2. Collect interesting statistical facts from various sources and paste it in your note book.
3. Collect a primary data about the mode of transport of yourschool students. Classify the data and tabulate it.
4. From the mark sheets of your class, form the frequencytables, less than and more than cumulative frequency tables.
5. Get the previous monthly expenditure of your family andinterpret it into bar diagram and pie diagram. Based on thedata, propose a budget for the next month and interpretedinto bar and pie diagram.Compare the two months expenditure through diagrams
6. Measure the heights and weights of your class students.Find the mean, median, mode and compare
7. Find the mean marks of your class students in various subjects. Analysis of data by computing standard deviation and coefficient of variation.
8. Collect the data from magazines, newspapers, and television, and publications. Present the data in graphs and diagrams.

Text Book:

1. Business Statistics, Naval Bajpai, Pearson.

Reference books:

1. Statistics for management, Richard I. Kevin, Davis S. Rubin, Sanjay Rastogi, Masood Husain Siddiqui, Pearson, 7th edition.
2. J. K. Sharma, Business statistics problems and solutions, Pearson.
3. J. K. Sharma, Business statistics, Vikas, 4th edition.