B.Com.(Programme)
Discipline Specific Course- 3.1(DSC-3.1)

DSC-7 : BUSINESS STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
DSC -3.1: Business Statistics	4	3	0	1	Pass in XII	NIL

Learning Objectives

The course aims to develop amongst the learners the ability to summarize, analyse and interpret quantitative information for business decision making.

Learning outcomes

After completion of the course, learners will be able to:

1. Examine and interpret various descriptive properties of statistical data.
2. Identify probability rules and concepts relating to discrete and continuous random variables to answer questions within a business context.
3. Analyse the underlying relationship between variables and perform predictive analysis using regression models.
4. Analyse the trends and tendencies over a period through time series analysis.
5. Apply index numbers to real life situations.

SYLLABUS OF DSC-3.1

Unit 1: **Descriptive Statistics**

Measures of Central Tendency: Concept and properties of averages including Arithmetic mean, Median and Mode.
Measures of Dispersion: An overview of Range, Quartile Deviation and Mean Deviation; Standard deviation; Variance and Coefficient of variation.
Moments: Computation and significance; Skewness; Kurtosis.

Unit 2: Probability and Probability Distributions

Theory and approaches to probability; Probability Theorems: Addition and Multiplication;

Conditional probability and Bayes' Theorem.
Expectation and variance of a random variable.
Discrete Probability distributions: Binomial and Poisson (Properties and Applications).
Normal distribution: Properties of Normal curve; Computation of Probabilities and Applications.

Unit 3: Simple Correlation and Regression Analysis

Correlation Analysis: Meaning and types of Correlation; Correlation Vs Causation; Pearson's coefficient of correlation (computation and properties); Probable and standard errors; Rank correlation.
Regression Analysis: Principle of least squares and regression lines; Regression equations and estimation; Properties of regression coefficients; Relationship between Correlation and Regression coefficients; Standard Error of Estimate.

Unit 4: Time Series Analysis

Time Series Data; Components of time series; Additive and Multiplicative models. Trend analysis; Fitting of trend using principle of least squares – linear and second-degree parabola. Shifting of Origin and Conversion of annual linear trend equation to quarterly/monthly basis and vice-versa.

Unit 5: Index Numbers

Meaning and uses of index numbers.
Construction of Index numbers: Methods of Laspeyres, Paasche and Fisher's Ideal index.
Construction and Utility of Consumer Price Indices; BSE SENSEX, and NSE NIFTY.

Practical Exercises:

The learners are required to:
1. Observe and apply the concepts of descriptive statistics in real life situations. 2. Practice basic calculations in statistics using spreadsheets and try to use it for solving subject related assignments.
3. Conduct a small primary research/survey in groups and analyse the data using statistical tools discussed in the class (Examples: Buying behaviour, Motivation, Stress, Brand aspects, Sales Projections, Impact of advertisements etc).
4. Conduct a statistical experiment to estimate the probability of any event occurring in future.
5. Analyse the relationship between different factors affecting the demand for any product. Predict future demand of the product using regression analysis.
6. Analyse the past price movement in any equity stock using trend analysis.
7. Construct a hypothetical index that is representative of large cap stocks listed on NSE.