

## STATISTICAL METHODS FOR DECISION MAKING

<b>CREDITS</b>	<b>3</b>
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### OBJECTIVE:

- To learn the applications of statistics in business decision making.

### UNIT I INTRODUCTION 9

Basic definitions and rules for probability, conditional probability independence of events, Baye's theorem and random variables, Probability distributions: Binomial, Poisson, Uniform and Normal distributions.

### UNIT II SAMPLING DISTRIBUTION AND ESTIMATION 9

Introduction to sampling distributions, sampling distribution of mean and proportion, application of central limit theorem, sampling techniques. Estimation: Point and Interval estimates for population parameters of large sample and small samples, determining the sample size.

### UNIT III TESTING OF HYPOTHESIS - PARAMETRIC TESTS 9

Hypothesis testing: one sample and two sample tests for means and proportions of large samples (z-test), one sample and two sample tests for means of small samples (t-test), F-test for two sample standard deviations. ANOVA one and two way.

### UNIT IV NON-PARAMETRIC TESTS 9

Chi-square test for single sample standard deviation. Chi-square tests for independence of attributes and goodness of fit. Sign test for paired data. Rank sum test. Kolmogorov-Smirnov – test for goodness of fit, comparing two populations. Mann – Whitney U test and Kruskal Wallis test. One sample run test.

### UNIT V CORRELATION AND REGRESSION 9

Correlation – Coefficient of Determination – Rank Correlation – Simple Regression – Estimation of Regression line — Method of Least Squares – Standard Error of estimate.

**TOTAL: 45 PERIODS**

### OUTCOMES:

- To facilitate objective solutions in business decision making.
- To understand and solve business problems
- To apply statistical techniques to data sets, and correctly interpret the results.
- To develop skill-set that is in demand in both the research and business environments
- To enable the students to apply the statistical techniques in a work setting.

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4. Ken Black, Applied Business Statistics, 7th Edition, Wiley India Edition, 2012.
5. Anderson D.R., Sweeney D.J. and Williams T.A., Statistics for business and economics, 11th edition, Thomson (South – Western) Asia, Singapore, 2012.
6. N. D. Vohra, Business Statistics, Tata McGraw Hill, 2012.