

MB104: Statistics for Management

Course Objectives:

- To develop statistical literacy skills in students in order to comprehend and practice statistical ideas at different levels.
- To understand and communicate statistical findings
- To learn to apply statistical tools to solve managerial questions

Unit-I: Introduction to Statistics:

Introduction to Statistics, Overview, Origin and Development and Managerial Applications of Statistics, Measures of Central Tendency, Dispersion and Skewness, Introduction to Probability, Concepts and Definitions of Probability, Classical, Relative Frequency, Subjective and Axiomatic Approaches, Addition and Multiplication Theorems, Statistical Independence, Marginal, Conditional and Joint Probabilities, Baye's Theorem and its Applications.

Unit-II: Probability Distribution:

Probability Distribution - Random Variable (RV), Expectation and Variance of a RV, Probability Distribution Function, Properties, Continuous and Discrete Probability, Distribution Functions, Discrete Probability Distributions: Binomial Distribution, Properties and Applications; Poisson Distribution, Properties and Applications, Continuous Probability Distributions-Normal Distribution, Standard Normal Distribution, - Properties, Applications and Importance of Normal Distribution.

Unit-III: Sampling Theory and Testing of Hypothesis:

Sampling Theory - The basics of Sampling, Sampling Procedures, Random and Non-Random Methods, Sample Size Determination, Sampling Distribution, Standard Error, Hypothesis Testing- Statistical Estimation, Point and Interval Estimation, Properties of a Good Estimator, Confidential Interval, Large Sample Tests-Test for One and Two Proportions, Test for One and Two Means.

Unit-IV: Small Sample Tests:

Small Sample Tests - t - Distribution-Properties and Applications, Testing for One and Two Means, Paired t-Test. Analysis of Variance-One Way, Chi-Square Distribution: Test for Goodness of Fit, Test for Independence of Attributes.

Unit-V: Correlation Analysis, Regression and Time Series Analysis Bi Variate Analysis:

Correlation Analysis - Scatter Diagram, Positive and Negative Correlation, Limits for Coefficient of Correlation, Karl Pearson's Coefficient of Correlation, Spearman's Rank Correlation, Types of Correlation. Regression Analysis Concept, Least Square fit of a Linear Regression, Two Lines of Regression, Properties of Regression Coefficients. Time Series Analysis-Components, Models of Time Series-Additive, Trend Analysis, Moving Averages, Least Square Methods.

Suggested Books:

1. Levin R.I., Rubin S. David, "Statistics for Management", 2000, 7th Ed. Pearson.
2. Gupta S.C, "Fundamentals of Statistics", 2010, 6th Ed. HPH.
3. John C Lee, "Business and Financial Statistics Using MS-Excel", First Edition, 2009, Cambridge.
4. J. K Sharma, "Business Statistics", 2010, 2nd Ed. Pearson.
5. Beri, GC, "Business Statistics", 2010, 3rd Ed. TMH.

Course Outcomes:

- Think critically about the data arising in management environments.
- Select the best tools to describe, analyze data for decision support