

CORE COURSE - III : MATHEMATICS AND STATISTICS

Objectives:

This course mainly deals with the use of Mathematical and Statistical concepts in the resolution of managerial decision problems. As such the course will deal not only with some of the theoretical concepts in Mathematics and Statistics but will also be concerned with their application.

UNIT – I

Mathematical basis of managerial decisions: Functions –Application of functions – Maxima & Minima –Matrix Algebra – Arithmetical Operations - Properties, Solutions of equations by inverse method, Gauss –Jordan method and Cramer’s rule.

UNIT – II

Linear Programming – Formulation – Graphical methods – Introduction to Probability – Addition & Multiplication theorems – Bayes theorems and its applications. Theory of expectation – EMV.

UNIT –III

Descriptive Statistics – measures of central tendency – measures of dispersion; Skewness & Kurtosis – Frequency distribution – Histograms – Polygons.

Definition of random variable – Binomial distribution, Poisson distribution, Normal distribution – Applications to Business situations.

UNIT – IV

Theory of Sampling and Sampling methods: Simple random sampling – Stratified random sampling – Systematic sampling – Cluster sampling.

Testing of Hypothesis and Theory of inference – Type I and II errors. Concept of Sampling distribution – test of significance for means, proportions and S.Ds. Large samples: Analysis of Variance one way classification.

UNIT – V

Theory of Correlation and Regression: Meaning of Correlation and regression – Principles of Least squares – Simple Linear Regression – Simple correlation – Co-efficient – Rank Correlation.

Reference:

1. Mathematics for Managers - M.Raghavachari, TMH
2. Statistics for Management - Levin etal (PHI)
3. Business Statistics - Saha (Central)
4. Quantitative Techiques for managerial Decision Making - V.K.Srivastava, S.V.Shenoy & S.C.Sharma
5. Introduction to Statistics for Business - John Fraund.