

MNG -101
STATISTICS AND DECISION SCIENCE
Credit – 4 : Class Hours - 40

Objectives:

1. To lay an adequate theoretical foundation to study various applied fields in statistics and decision science.
2. To understand role of quantitative techniques in managerial decision making.
3. To understand applications of various quantitative techniques in managerial settings.

Module-I: Statistical Methods: Measures of central tendency and dispersion: Standard Deviation, moments, measures of skewness and kurtosis. Simple Correlation, calculation of correlation coefficient, probable error, Rank correlation. Regression: Linear regression, calculation of regression coefficients, Time series Model (Component, Uses, Moving Average Method, Least Square Method)

Module II: Probability: Concept, Addition, Conditional Probability Baye's theorem, Probability Distributions: Binomial, Poisson and Normal

Module III: Decision Sciences & role of quantitative techniques. Linear Programming: Concept, Formulation & Graphical and Simplex Solution
Assignment Models: Concept, Flood's Technique / Hungarian Method, applications including restricted & multiple assignments.
Transportation Models: Concept, Formulation, Problem types: Balanced, Unbalanced, Minimization, Maximization Basic initial solution using North West Corner, Least Cost & VAM, and Optimal Solution using MODI.

Module-IV: Queuing Theory: Concept, Single Server (M/M/I),
Markov Chains & Simulation Techniques: Markov chains: Applications related to management functional areas, Decision Theory: Concept, Decision under risk (EMV) & uncertainty Game Theory : Concept, 2 zero sum game with dominance, Pure & Mixed Strategy.

Module – V: The concerned faculty shall have the liberty to define the course contents under this module and teach students accordingly.

Reference Books

1. Quantitative Techniques for Management, Levine, Berenson, Render Hanna, Pearson
2. Quantitative Techniques in Management by N.D. Vohra Tata, McGraw Hill
3. Quantitative Techniques-Davis.B, Oxford
4. Operations Research by R. Pannerselvam, Prentice Hall
5. Statistics for Business and Economics; R P Hooda, Vikas
6. Operations Research by Nita Shah, Ravi Gor, HardikSoni, PHI