

IMN203: QUANTITATIVE METHODS-I

Module-I: Linear Programming:

Basic concept; Structure of Linear Programming Model; Application areas of Linear Programming; General Mathematical Model of Linear Programming Problem; Guidelines on Linear Programming Model Formulation; Examples of LP Model Formulation in various functional areas of management; Graphical Solution Method of LP Problems; The Simplex Method (Maximization Case; Minimization Case-Two Phase Method & Big M Method).

Module-II: Transportation Problem:

Mathematical Model of Transportation Problem; The Transportation Algorithm; Methods for Finding Initial Solution (North-West Corner Method, Least Cost Method, Vogel's Approximation); Test of Optimality- MODI Method (Transportation Algorithm).

Module-III: Assignment Problem:

Mathematical Model of Assignment Problem; Solution Methods of Assignment Problem- Hungarian Method for solving Assignment Problem; Variations in the Assignment Problem- Multiple Optimal solutions, Maximization Case in Assignment Problem, Unbalanced Assignment Problem, Restrictions on Assignments.

Module-IV: Decision Theory and Decision Tree:

Steps of Decision making Process; Types of Decision Making Environment; Decision Making under Uncertainty (Optimism Criterion, Pessimism Criterion, Equal Probabilities criterion, Coefficient of Optimism Criterion, Regret Criterion); Decision Tree Analysis, Decision Making with Utilities.