

ST4 E02: OPERATIONS RESEARCH

UNIT I

Transportation problems, assignment problems, Sequencing problem, traveling salesmen problems, network analysis, GANTT, CPM, PERT.

UNIT II

Inventory models, deterministic inventory models, EOQ models with and without shortages, multi-item deterministic models with one linear constraint, EOQ problem with price breaks, probabilistic inventory models single period stochastic models without set up cost, general single period models.

UNIT III

Characteristics of dynamic programming and developing optimal decision policy using Bellman's principle of optimality, dynamic programming under certainty, single additive constraint-additives separable returns, single multiplicative constraint-additives separable return, single additive constraint multiplicatively separable return, dynamic programming approach for solving LPP, NLPP, quadratic programming, Kuhn -Tucker conditions, Wolfe's modified simplex method and Beale's method.

UNIT IV

Theory of games, two person zero-sum games, fundamental theorem of matrix games, dominance property, graphical method of solution of $2 \times n$ and $m \times 2$ games, Rectangular games as LPP.

Reference Books:

1. Ravindran A, Philips D.T and Soleberg, Operations Research – Principles and Practice, John Wiley and Sons.
2. J K Sharma Operations research – Theory and Applications Macmillan.
3. Frederick S Hiller and Gerala Jlieberman, Introduction to Operations Research Tata Mcgraw Hill.
4. Kanti Swarup, Gupta, Manmohan (2004) 10th edition, Operations Research – Principles and Practice.
5. Thaha H A, Operations Research – An Introduction, Prentice Hall.
6. Mittal K.V (1983) Optimization methods in OR system analysis, Wiley Eastern.