SEMESTER 11 **Credit-4**
Code: OR02C10 **Hrs 90**

OPERATIONS RESEARCH

Objectives

- ***To enable the students to understand various techniques used in operation management decisions.***

MODULE-1 **Operations research-meaning-origin and development-nature-OR in India-OR as a tool in decision making-OR and management-features and methodology of OR-Phases of OR study-models in OR-methods of deriving the solution-limitations of OR.**

(5 Hrs)

MODULE-2 **Linear Programming-meaning-concepts-notations-uses and applications-formulation-graphical solution-simplex method-introduction of slack, surplus and artificial variable-duality.**

(30 Hrs)

MODULE-3 **Transportation problems- different initial allocation methods-move towards optimality-MODI method of solving transportation problems.**

Assignment problems-solutions-variations in assignment problems.

(20 Hrs)

MODULE-4 **decision theory-Quantitative approach to management decision making-decision under conditions of uncertainity-Maximin-Maximax-Hurwics, Laplace and Minimax regret criteria-Decision making under risk-EMV-EOL-EVPI criteria-decision tree analysis- Game theory-Queing theory.**

(20 Hrs)

MODULE-5 **Network analysis-CPM and PERT-Net work concepts-construction of network diagram-numbering the events (Fulkerson's Rule), requirements-Network calculations-CPM-Concept of float-PERT-probability considerations in PERT-calculation of float/slack under PERT-PERT calculations-points of similarities and dissimilarities in PERT and CPM-limitation of PERT and CPM.**

(15 Hrs)