

II Year II Semester

Code	Course	Marks	L	T	P	C
24BB4C03	Operations Research	100	4	0	0	4

Course Outcomes:

After completion of the course student will be able to

CO Number	CO Statement	Knowledge Level
CO1	Solve business problems using linear programming models and apply the graphical and simplex methods for decision-making.	Applying
CO2	Apply and evaluate transportation and assignment models to determine the optimal allocation of resources in business scenarios.	Applying
CO3	Analyze and compute job sequencing problems and determine replacement policies for effective time and cost management.	Analyzing
CO4	Examine and apply game theory strategies, including pure and mixed strategies, to solve competitive business decision-making problems.	Analyzing
CO5	Construct project networks using CPM and PERT techniques to estimate project duration, critical path, and cost optimization.	Applying

Course Content:

Unit – I: Introduction to Operation research: Importance-The History of OR-Definition-Features-Scope of Operations Research –Linear Programming: Introduction-Advantages of using LP-Application areas of LP- Formation of mathematical modeling, Graphical method, the Simplex Method; Justification, interpretation of Significance of All Elements In the Simplex Tableau.

Unit II: Transportation, Assignment Models: Definition and application of the transportation model, methods for finding initial solution-tests for optimality-variations in transportation problem, the Assignment Model, Travelling Salesman Problem.

Unit – III: Sequencing and Replacement Model: Job Sequencing – Definition, assumptions and solutions of sequencing problems - Processing n jobs through Two machines- Processing n jobs through Three machines - Replacement models comprising single replacement and group replacement.

Signed by:

Dr. G P S V S D NagendraRao
(Chairman)

Dr. A KrishnaMohan
(University Nominee)

Dr. P Uma Maheswari Devi
(Subject Expert -1)

Dr. M SreeramaRaju
(Subject Expert -2)

Head
Dept of Management Studies
BVCITS, BHATLAPALEM

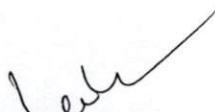
Unit – IV : Game Theory: Introduction – Two Person Zero-Sum Games, Pure Strategies, Games with Saddle Point, Mixed strategies, Rules of Dominance, Solution Methods of Games without Saddle point – Algebraic, matrix and arithmetic methods.

Unit – V: CPM and PERT: Drawing networks – identifying critical path – probability of completing the project within given time- optimum cost and optimum duration.

References:

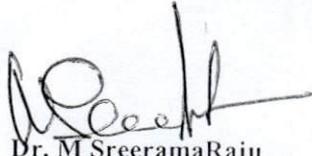
1. Winston, Operations Research, Cengage, ND
2. Operations Research by A M Natarajan, P Balasubramanie, A Tamilarasi- Pearson.
3. Anand Sharma, Operations Research, Himalaya Publishing House,
4. Kalavarthy, S. Operations Research, Vikas Publishers House Pvt Ltd.,
5. Mcleavey & Mojena, Principles of Operations Research for Management, AITBS publishers,
6. V.K.Kapoor, Operation Research Techniques for Management, Sultan Chand & Sons,
7. Richard Bronson & Govindasami Naadimuthu, SCHAUM_S OUTLINE OF THEORY & PROBLEMS OF Operations Research, 2nd Ed., Tata Mc Graw-Hill Edition,
8. JK Sharma Operation Research – Theory and Applications, MacMillan.

Signed by:


Dr. G P S V S D NagendraRao
(Chairman)


Dr. A KrishnaMohan
(University Nominee)


Dr. P Uma Maheswari Devi
(Subject Expert -1)


Dr. M SreeramaRaju
(Subject Expert -2)