JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTHAPURAMU – 515 002 (A.P) INDIA

MASTER OF BUSINESS ADMINISTRATION
MBA; MBA (General Management); MBA (Business Management)
COMMON COURSE STRUCTURE

Dr K Vishnu Reddy School of Business Management

Course Code	OPERATIONS RESEARCH	L	T	P	C
21E00205		4	0	0	4
	Semester	II			

Course Objectives:

- To provide the basic knowledge about Operation Research, importance, application areas of Operations research and various optimizing techniques in the business operations.
- To impart different optimization models under typical situations in the business organization.
- To describe different game strategies under cut-throat competitive business environment
- To explain optimization tools in solving the management problems through modelling and using mathematical approach.

Course Outcomes (CO): Student will be able to

- Understand nature, scope and significance of Operation Research and formulation of given business problem in a LPP model and solving methods.
- Learn different optimizing solutions for various business problems using appropriate modelling techniques.
- Acquire the skills to complete a project effectively and efficiently with in the given resources.

UNIT - I — Lecture Hrs:12

Introduction to OR: Meaning, Nature, Scope & Significance of OR - Typical applications of Operations Research. The Linear Programming Problem – Introduction, Formulation of Linear Programming problem, Limitations of L.P.P, Graphical method, Simplex method: Maximization and Minimization model(exclude Duality problems), Big-M method and Two Phase method.

UNIT - II — Lecture Hrs:12

Transportation Problem: Introduction, Transportation Model, Finding initial basic feasible solutions, Moving towards optimality, Unbalanced Transportation problems, Transportation problems with maximization, Degeneracy.
Assignment Problem – Introduction, Mathematical formulation of the problem, Solution of an Assignment problem, Hungarian Algorithm, Multiple Solution, Unbalanced Assignment problems, Maximization in Assignment Model.

UNIT - III — Lecture Hrs:10

Sequencing – Job sequencing, Johnsons Algorithm for n Jobs and Two machines, n Jobs and Three Machines, n jobs through m machines, Two jobs and m Machines Problems.

UNIT - IV — Lecture Hrs:10

Game Theory: Concepts, Definitions and Terminology, Two Person Zero Sum Games, Pure Strategy Games (with Saddle Point), Principal of Dominance, Mixed Strategy Games (Game without Saddle Point), Significance of Game Theory in Managerial Application.

UNIT - V — Lecture Hrs:12

Project Management: Network Analysis – Definition –objectives -Rules for constructing network diagram- Determining Critical Path – Earliest & Latest Times – Floats - Application of CPM and PERT techniques in Project Planning and Control – PERT Vs CPM. (exclude Project Crashing)

Textbooks:

1. Operations Research / R.Pannerselvam, PHI Publications.
2. Operations Research / S.D.Sharma-Kedarnath
3. Operations Research /A.M.Natarajan,P.Balasubramani,A. Tamilarasi/Pearson Education.

Reference Books:

1. Introduction to O.R/Hiller &Libermann (TMH).
2. Operations Research: Methods & Problems / Maurice Saseini, ArhurYaspan& Lawrence Friedman. Pearson
3. Quantitative Analysis For Management/ Barry Render, Ralph M. Stair, Jr and Michael E. Hanna/
4. Operations Research / Wagner/ PHI Publications.

Online Learning Resources:

https://onlinecourses.swayam2.ac.in/cec20_ma10/preview
https://onlinecourses.nptel.ac.in/noc20_ma23/preview
https://onlinecourses.nptel.ac.in/noc19_ma29/preview