19BSM601- Linear Programming										
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
3	1	--	4	4	25	50	25	--	--	100

OBJECTIVES

1. Getting familiarize with the mathematical formulation of a real world problem in terms of mathematical inequalities.

2. To acquaint with the problem solving techniques theoretically as well as graphically.

3. To tackle several parameters into account while dealing with the problem.

4. To make aware the students about the applications of various concepts of Linear Programming.

SYLLABUS

Unit-I	**10**

Linear programming modeling, Optimal solutions and graphical interpretation of optimality. Graphical method of solving two variable problems

UNIT II	**10**

Notion of convex set, convex functions and their properties, Feasible solution, optimum solution, Slack and Surplus variables.L.P.P. in a standard form, Properties of a solution (without proof)

UNIT III	**10**

Methods for finding initial basic feasible solution: North-West Corner Rule, Matrix Minima Method, Vogel's Approximation Method, Optimal Solution: MODI Method, Assignment Problem: Hungarian Method.

UNIT IV	**9**

LPP in canonical form to get the initial BFS & method of improving current BFS , Case of unbounded LPP, Simplex method and its computational procedure, Artificial basis technique and its interpretation in context of feasibility, Transportation problem, Dual Simplex Method.

APPROXIMATE TOTAL	**39 Hours**

OUTCOMES

1. Students obtain the skills necessary to deal with models involving the needs of linear programming techniques.
2. Students gain a familiarity with the application of matrices in real world problems.
3. Students get acquainted with the application of different methods

in solving different kind of problems at a moment.

TEXTS AND REFERENCES

1. S. I. Gass, Linear programming, Mc Graw Hill Book Company, 1985.
2. Kanti Swaroop, Man Mohan and P.K. Gupta, Operations Research, Sultan Chand and Sons, 2005.
3. Hamdy A. Taha, Operations Research: An Introduction, McMillan Publishing Company, 2007.
4. K. V. Mittal and C. Mohan, Optimization methods in Operations Research and System Analysis, New Age International Publications,1996.