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.

LINEAR PROGRAMMING (BSM 504)

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

[5]

Unit-I

General discussions of Mathematical Formulation of Real World Problems (in terms of inequalities).

Unit-II [12]

Graphical method of solving two variable problems, Convex sets 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 [12]

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 [10]

Simplex method and its computational procedure, Artificial basis technique. Transportation problem, Dual Simplex Method.

APPROXIMATE TOTAL **39 Hours**

Texts and References

1. S. I. Gass, Linear programming, Mc Graw Hill Book Company, 1985.
2. KantiSwaroop, 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.

Course 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.