

Lecture Plan		
Name of the College: Government College of Arts, Science and Commerce, Sanquelim-Goa		
Name of Faculty: Sudip Rajendra Naik	Subject: Mathematics	
Paper code: MAT-327 Linear Programming Problems (Practicals)	Program: B.Sc.	Division: -
Academic year: 2026-27	Semester: - V	Total Lectures: 45
Course Objectives:		
1. To make students familiarize with the mathematical formulation of real-world problems.		
2. To acquaint students with the problem-solving techniques theoretically and graphically.		
Expected Course Outcome:		
1) Formulate real world problems as mathematical problems.		
2) Solve the linear programming problems.		
3) Apply the concept of duality to solve LPPs.		
4) Formulate and solve transportation and assignment problems.		
Student Learning Outcome: Student will be able to		
1) Formulate and solve linear programming problems graphically and using the Simplex, Big-M and Two-Phase methods.		
2) Apply duality theory and the dual simplex method, and solve transportation and assignment problems using standard algorithms.		

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
Jul/Aug	27/07/2026	01/08/2026	2	Graphical solution method to LPP			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
August	03/08/2026	08/08/2026	4	Computational procedure of Simplex Method			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
	10/08/2026	15/08/2026	2	Two Phase Method			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
	17/08/2026	22/08/2026	2	Big M method			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
	24/08/2026	29/08/2026	4	Duality and simplex method			Handouts in LaTeX
Aug/Sep	31/08/2026	05/09/2026	4	Dual Simplex Method			Handouts in LaTeX
September	07/09/2026	12/09/2026	4	Finding initial basic feasible solution to transportation problem (balanced and unbalanced)			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
	14/09/2026	19/09/2026	0	Ganesh Chaturthi Break (14–19 Sep)			

	21/09/2026	26/09/2026	4	Optimal solution (degenerate and nondegenerate) to transportation problem (MODI method)			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
Sep/Oct	28/09/2026	03/10/2026	4	Hungarian Assignment Method (balanced and unbalanced)			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
October	05/10/2026	10/10/2026	3	Assignment problem - mathematical formulation; reduction theorem (with proof). Hungarian assignment method. Unit IV review and problem solving.			Kanti Swarup, P. K. Gupta and Man Mohan: Operations Research
	12/10/2026	14/10/2026	1	Term-end revision			

*** Assessment Rubrics**

Component	Max Marks
Viva	5
Journal	5
Practical Exam	15
Total	25