Name of College: S. R. Luthra Institute of Management								
Faculty	Management			**Program**	Master of Business Administration (M.B.A.)			
Year	II			**Version**	1.0			
Semester	3			**Effective From**	June 2024			
Course Code	MGMB16303	Course Name		Operations Research (OR)				
Teaching Scheme				**Examination Scheme**				
Credits	**Lecture (L)**	**Tutorial (T)**	**Practical (P)**	**ME**	**CE**	**SE**	**V**	**Total**
4	4	0	0	30	40	50	---	120

Course Outcomes:

CO1	Construct Linear Programming Problems and Dual problems
CO2	Solve Linear Programming Problems
CO3	Construct to assess optimal solution for transportation problem
CO4	Simulate business situations to design optimal solution
CO5	Devise the decision making mechanism

Mapping Course Outcomes to Program Outcomes:

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	3	3	1	1	2	1
CO2	3	3	1	1	2	1
CO3	3	3	1	1	2	1
CO4	3	3	1	2	2	1
CO5	3	3	1	1	2	1

Sr. No	Module	Description	CO	Marks	Hours
1	I	**Introduction to Operations Research (OR)** • Definitions • Methodology • Application of OR **Linear Programming Problems (LPP): Model Formulation** • Structure of LPP • Assumptions of LPP • Steps for LP model formulation **Linear Programming: Graphical Solution Method** • Maximization Problems • Minimization Problems • Special cases in graphical solution - Alternative Optimal Solutions - Unbounded Solutions - Infeasible Solution - Redundancy	1,2	12	10
2	II	**Linear Programming: Simplex Method** • Maximization Problems - Initial Solution - Improved Solution - Optimal Solution **Duality in Linear Programming** • Constructing the Dual from Primal **Transportation Problem** • Steps to solve transportation problem - Formulation - Initial Feasible Solution: North-West Corner Method, Least Cost Method, Vogel's Approximation Method - Test for Optimality - Optimal Solution: MODI Method **Simulation** - Monte Carlo Simulation	1,2	14	10
3	III	**Decision Tree Analysis** **Theory of Games**	3,4	12	10
4	IV	**Markov Chains** • Multi-period transition probabilities • Steady-State (Equilibrium) Conditions	5	12	10

REFERENCES:

Books:	
1.	Sharma J. K. (2021). *Operations Research.* McMillan publishing (India) Ltd.
2.	Taha H. A. (2019). *Operations Research.* Pearson publishing (India) Ltd.
3.	Srinivasan G. (2020). *Operations Research.* Prentice-Hall (India) Private Ltd.