Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Name of the Program: Undergraduate Programs

SUBJECT CODE	Category	SUBJECT NAME	THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM	MST	Q/A	END SEM	Q/A				
GUMA801	Generic Elective	**Operations Research**	60	20	20	-	-	4	0	0	4

Course Objective

To introduce the students to the Optimization Techniques.

Course Outcomes

After the successful completion of this course students will be able to

1. understand and apply the Optimization Techniques.

2. able to know graphs and optimization.

3. able to apply network and graph problems.

Course Content:

Unit I:

Linear programming: basic formulation; geometric interpretation and convex polytope, simplex algorithm.

Unit II:

Bland's rule, duality theory, the complexity of the simplex method, polynomial time algorithms, ellipsoidal, and Karmarkar's methods.

Unit III:

Network and graph problems: minimum spanning trees, shortest path, flows in networks, perfect matching problem; Gale-Shapley algorithm for stable marriage.

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Unit IV:

A brief introduction to integer programming problems

Unit V:

A brief introduction to non-linear programming problems.

Reference Books:

1. C. H. Papadimitriou and K. Steiglitz: Combinational Optimization.

2. Robert J. Vanderbei: Linear Programming.

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