**Curriculum Plan: B. Sc. (H) Maths III Year (Semester V) Differential Linear Programming and Applications. ODD SEM (2025-26)**

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| **Teacher Profile:**  **Sanjay Kumar**  Department of Mathematics  Kalindi College, University of Delhi,  Delhi- 110008  Mobile: +91-8800982887  **E- mail**: sanjaykumar@kalindi.du.ac.in | |  | **Marks Distribution** | **Theory** | 90 Marks | |
| **Internal Assessment** | Assignments 12 Marks | |
| Class- Test 12 Marks | |
| Attendance 6 Marks | |
|  | **Tut Assessment** | 40 Marks | |
|  | **Total Marks** | 160 | |
| **Classes Assigned** | **Lectures** | 1 per week | |
| **Practical Groups**  (per week per Student) |  | |
| **Reference** | **[1]** | Bazaraa, Mokhtar S., Jarvis, John J., & Sherali, Hanif D. (2010). Linear Programming and Network Flows (4th ed.). John Wiley and Sons. Indian Reprint. | | | | |
|  | **[2]** | Hillier, Frederick S. & Lieberman, Gerald J. (2021). Introduction to Operations Research (11th ed.). McGraw-Hill Education (India) Pvt. Ltd. | | | | |
|  | **[3]** | Taha, Hamdy A. (2017). Operations Research: An Introduction (10th ed.). Pearson. | | | | |
| **Section** | **Week** |  | | | |  | |
| Session 1 | 1st week | Transportation Problem: Definition and formulation. | | | |  | |
|  | 2nd week | Northwest-corner methods of finding initial basic feasible solutions. | | | |
| Session 2 | 3rd week | Least- cost methods of finding initial basic feasible solutions | | | |  | |
| 4th week | Vogel’s approximation methods of finding initial basic feasible solutions. | | | |  | |
| 5th week | Algorithm for solving transportation problem. | | | |  | |
|  | 6th week | Example of transportation problem. | | | |  | |
|  | 7th week | Assignment Problem: Mathematical formulation. | | | |  | |
| Session 3 | 8th week | Example of Assignment Problem. | | | |  | |
|  | 9th week | Hungarian method of solving. | | | |  | |
|  | 10th week | Game Theory: Two-person zero sum. | | | |  | |
|  | 11th week | Games with mixed strategies. | | | |  | |
| Session 4 | 12th week | Formulation of game to primal. | | | |  | |
|  | 13th week | Dual linear programming problems. | | | |  | |
|  | 14th week | Solution of games using duality. | | | |  | |
| Session 5 | 15th, 16th week | Revision and assignment Problems. | | | |  | |