**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 MathematicsKalindi College, University of Delhi, Delhi- 110008Mobile: +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. |  |