**Curriculum Plan: Generic III (Maths) II Year (Semester III) Differential Equation. 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** | 3 per week |
| **Practical Groups**(per week per Student)  |  |
| **Reference**  | **[1]** | Myint-U, Tyn and Debnath, Lokenath (2007). Linear Partial Differential Equations for Scientist and Engineers (4thed.). Birkkäuser Boston. Indian Reprint. |
|  | **[2]** | Ross, Shepley. L. (1984). Differential Equations (3rd ed.). John Wiley & Sons. |
| **Section** | **Week** |  |  |
| Session 1 | 1st week  | First order ordinary differential equations: Basic concepts and ideas. |  |
|  | 2nd week  | First order Exact differential equations, integrating factors and rules to find integrating factors |
| Session 2 | 3rd week  | Linear equations and Bernoulli equations, Initial value problems.  |  |
| 4th week  | Applications of first order differential equations: Orthogonal trajectories and Rate problems. |  |
| 5th week  | Basic theory of higher order linear differential equations, Wronskian and its properties. |  |
|  | 6th week  | Linear homogeneous equations with constant coefficients,  |  |
|  | 7th week  | Linear non-homogeneous equations, Linear non-homogeneous equations,  |  |
| Session 3 | 8th week  | Method of variation of parameters, Two-point boundary value problems,  |  |
|  | 9th week  | Cauchy-Euler equations, System of linear differential equations. |  |
|  | 10th week  | Classification and Construction of first-order partial differential equations. |  |
|  | 11th week  | Method of characteristics and general solutions of first-order partial differential equations. |  |
| Session 4 | 12th week  | Canonical forms and method of separation of variables for first order partial differential equations. |  |
|  | 13th week  | Canonical forms and method of separation of variables for first order partial differential equations. |  |
|  | 14th week  | Classification and reduction to canonical forms of second-order linear partial differentialequations and their general solutions. |  |
| Session 5 | 15th, 16th week  | Revision and assignment Problems  |  |