**GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)**

**Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025**

**Name of Assistant/Associate Professor:- Dr. Jyoti**

**Class:- B.A/ B.sc- 2nd year From:- July 2024-Nov 2024**

**Subject:- Partial Differential equations Semester:- ODD Semester**

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| **Months** | **Week** | **Topics/ Chapters to be Covered** |
| **JULY** | **4th week** | **Chapter: Partial differential equations: Formation, order and degree, Exampleof formation of Partial differential equations, Example to find the order and degree of Partial differential equations.** |
| **AUGUST** | **1st week** | **Chapter : Linear and Non-Linear Partial differential equations of the first order, Example to check the Linear and Non-Linear Partial differential equations of the first order and Higher Order.** |
| **2nd week** | Chapter: Classification of the solutions of Partial differential equations, Complete solution, singular solution, General solution, Example to find the solutions of Partial differential equations in various form. |
| **3rd week** | **Chapter: Solution of Lagrange's linear equations, Charpit's general solution. Example to find the solutions of Partial differential equations in various form using Charpit's general method.** |
| **4th week** | **Chapter: Compatible systems of first order equations, Condition for Compatibility, Special case to find the Compatibility of Partial differential equations** |
| **SEPTEMBER** | **1st week** | Chapter: Some standard forms of Partial differential equations and its solutions, Jacobi's method, Example to find the solutions of Partial differential equations in various forms using Jacobi's method. |
| **2nd week** | **Chapter: Linear partial differential equations of second and higher orders, Findcomplementary function of linear homogeneous partial differential equations**  **with constant coefficients, Method to Find particular integral of linear homogeneous partial differential equations with constant coefficients.** |
| **3rd week** | Chapter: Non-homogeneous equations with constant coefficients. Find complementary function of linear non-homogeneous partial differential equations with constant coefficients, Method to Find particular integral oflinear non-homogeneous partial differential equations with constant coefficients. |
| **4th week** | **Chapter: Partial differential equation with variable coefficients reducible to equations with constant coefficients, Classification and Canonical forms of second order linear partial differential equations.** |
| **OCTOBER** | **1st week** | Chapter: Method to find the complimentary functions and particular Integralsof Partial differential equation with variable coefficients. Equations reducible to linear equations with constant co-efficients. |
| **2nd week** | **Chapter: Classification of linear partial differential equations of second order. Method to find Classification of linear partial differential equations of secondorder and solve its exercise given in reference books** |
| **3rd week** | **Chapter: Hyperbolic, parabolic and elliptic type's partial differential equations. Reduction of Hyperbolic equations to its canonical forms, Reduction of parabolic equations to its canonical forms, Reduction of elliptic equations to its canonical forms.** |
| **4th week** | Chapter: Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions, |
| **NOVEMBER** | **1st week** | **partial differential equations using different type of methods. Chapter: Monge's method for partial differential equations of second order. Find solution of partial differential equations of second order using Monge's method.** |
| **2nd week** | **Chapter: Cauchy's problem for second order partial differential equations and finds its examples and applications.**  **Chapter: Characteristic equations and characteristic curves of second order partial differential equation. Method to find Characteristic equations and characteristic curves of second order partial differential equation and solve its exercise** |
| **3rd week** | **Chapter: Method of separation of variables: Solution of Laplace's equation and solve its exercise.** |