|  Lesson plan of Mathematis(2020-21)  **B.Sc. -3rd sem(P.D.E)** |  |
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| **Week**  |  **Chapter** |  |
| 1 | Partial differential equations: Formation, order and degree, Linear and Non-Linear Partial differential equations of the first order: |  |
| 2 |  Solution of Lagrange’s linear equations, Charpit’s general method of solution |  |
| 3 | Compatible systems of first order equations, Jacobi’s method. |  |
| 4 | Linear partial differential equations of second and higher orders, Linear and non-linear homogenious and non-homogenious equations with constant co-efficients |  |
| 5 |  Partial differential eqution with variable co-efficients reducible to equations with constant coefficients, their |  |
| 6 | complimentary functions and particular Integrals, Equations reducible to linear equations with constant co-efficients. |  |
| 7 | Classification of linear partial differential equations of second order, Hyperbolic, parabolic and elliptic types, |  |
| 8 | Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions |  |
| 9 | Solution of linear hyperbolic equations, Monge’s method for partial differential equations of second order. |  |
| 10 | Cauchy’s problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation, |  |
| 11 | Method of separation of variables: Solution of Laplace’s equation, Wave equation (one and two dimensions), |  |
| 12. | Diffusion (Heat) equation (one and two dimension) in Cartesian Co-ordinate system. |  |