

MT-501	Differential Equations
	<p><u>Ordinary Differential Equations:</u>  Bessel's equation, Legendre's equation, Hermite equations, Laguerre's equation, Sturm-liouville problem, Eigen function and Eigen values, Ordinary differential equation from a geometric point of view, Involving significant use of phase-plane diagrams and associated concepts, Including equilibrium points, Orbits, limit cycles and domain of attraction, Simple application.</p> <p><u>Partial Differential Equation:</u>  Partial differential equation (vibrating string problem), Classification of partial differential equation, Partial differential equation with constant coefficients, Method of separation of variables, D'Alembert's method, General solution of wave equation, Initial value problem in general, Partial differential equation with variable coefficients, Solution of linear hyperbolic equation, Vibrating modes of a finite string, Simple application.</p> <p><u>Reference Books:</u></p> <ul style="list-style-type: none"> <li>• Ledder G, <i>Differential Equation a Modeling Approach</i>, William K. Barter, 2005.</li> <li>• Dass H.K, <i>Advanced Engineering Mathematics</i>, 17th Edition, S. Chand, 2007.</li> </ul>