MTH 401 THEORY OF ORDINARY DIFFERENTIAL EQUATIONS (3 Units)

Differential equations: existence and uniqueness theorems dependence of solution on initial data and parameters. Properties of solutions. Sturm comparison and Sonin-Polya theorems. Linear and non-linear systems. Floguet's theory and stability theory. Integral equations: classification, volterra and fredlhom types Neumann series. Fredholm alternative for degenerate Hilbert – Schmidt kernels. Reduction of ordinary differential equations to integral equations. Sysmmetric kernels, eigen function expansion with application.