MT608: NUMERICAL ANALYSIS-II

Syllabus: Curve Fitting and Function Approximations : Least square error criterion; Linear regression; Polynomial fining and other curve fitting; Approximation of functions by Taylor series and Chebyshev polynomials; Numerical solution of Ordinary differential Equations :Taylor series Method, Picard method, Runge-Kutta methods upto fourth order; Multistep method (Predictor-corrector strategies), Stability analysis-single and Multistep methods; BVP's of ordinary differential equation : Boundary value problems BVP's), Shooting methods; Finite difference methods; Difference schemes for linear boundary value problems of the type $y' = f(x,y)$, $y'' = f(x,y,y)$ and $y^{IV} = f(x,y)$

UNIT SCHEDULE

Unit 7 Curve Fitting and Function Approximations
Unit 8 Approximation of functions by Taylor series and Chebyshev polynomials
Unit 9 Numerical solution of Ordinary differential Equations
Unit 10 Numerical solution of Initial Value Problem
Unit 11 Boundary value problems-I
Unit 12 Boundary value problems-II