

Semester II

Subject Name: Numerical Analysis	Duration: 6 hrs /Cycle
Subject Code: 2PGM4(2015 on)	Credit : 4
<p>Unit I: Transcendental and Polynomial Equations: Iterative method based on second degree equations-Muller method - Chebyshev method –Multi point iteration methods - Rate of convergence for Muller and chebyshev method.</p> <p>Unit II: System of linear and Algebraic equations: Eigen value and Eigen vectors- Jacobi Method for symmetric matrices- Given method for symmetric matrices - House Holder method for symmetric matrices - Rutishauser method for arbitrary matrices – Power method for finding largest Eigen values and Eigen vectors.</p> <p>Unit III: Interpolation and Approximation: Piecewise linear interpolation- Piecewise quadratic interpolation- linear spline interpolation- Quadratic spine interpolation, Cubic spline interpolation.</p> <p>Unit IV: Differentiation and Integration: Introduction- Numerical Differentiation- Extrapolation methods- Partial differentiation-Numerical Integration-Methods based on Interpolation.</p> <p>Unit V: Ordinary Differential Equations: Initial value problems- Introduction- Differential Equations- Numerical Methods.</p>	

Text Book: Numerical Methods by M.K. Jain, S.R.K. Iyengar, R.K. Jain, 6th Edition 2012, New Age International Pvt. Ltd. Publisher.

Chapters: (2.1, 2.2, 2.3, 2.4, 2.5), (3.1,3.2,3.4,3.5,3.6), (4.1,4.2,4.3,4.4,4.5,4.6), (5.1,5.2,5.4,5.5,5.6,5.7), (6.1,6.2,6.3).

Reference Books: 1. Numerical Analysis by Francis Scheid, Schaum's Series, Tata McGraw - Hill (1968).

2. Numerical Analysis by David Kincaid and Ward Cheney, 3rd Edition 2009, AMS Publication.