

3. Scientific Computing

L-T-P 3-0-0 Cr. –3

Objective:

1. To understand the principles of Scientific Computing.
2. To be familiar with the various Scientific Computing Models and their applications.

MODULE – I

Introduction, Computer representation of numbers and roundoff error, Solving linear systems of equations.

MODULE – II

Finite difference methods, Solving nonlinear equations, Accuracy in solving linear systems

MODULE – III

Eigenvalues and eigenvectors, Fitting curves to data

MODULE – IV

Numerical integration, Initial value ODEs

Textbook:

Scientific Computing, For Scientists and Engineers, Timo Heister and Leo G. Rebholz
Published by De Gruyter 2023

Outcome:

Technical knowhow of the Data Mining principles and techniques for real time applications.