24PC1003 SCIENTIFIC COMPUTING (3-0-0)

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.