COMPUTATIONAL PHYSICS

- Introduction to computing- Numerical integration - Integration of Ordinary Differential Equations
- Integration of partial Differential Equations - Initial value problems
  The Parabolic Heat Equation - The Hyperbolic Wave Equation - Time dependent Schröedinger equation
- Integration of partial Differential Equations - Boundary value problems - Poisson Elliptic Equation - Relaxation, Over-Relaxation methods, Spectral methods - Introduction to finite element methods
- Monte Carlo Methods - Stochastic processes - Markov' chains - Master equation
- Monte Carlo Methods – Stochastic differential equations - Fokker Planck equation – Langevin equation
- Monte Carlo Methods Implementation - Integration - Simulation - Random walk - Time independent Schröedinger Equation - Ising Model - Phase Space Simulation