Introduction to Computational Physics

Format: Two lecture hours, Conference hour at computer
Language: MATLAB

Topics:
  - Introduction to the language and graphics
  - Ordinary differential equations:
    - Motion with air resistance, orbits, radioactive decays
  - Fitting data: least squares, chi-sq minimization
  - Random numbers, Monte Carlo methods:
    - Random walk, Simulation methods, scattering, decay
  - Fourier Series and Transform, applications to optics, sound
  - Partial differential equations: waves, wave packets, diffusion, relaxation methods