Computational modeling is an important component of modern science. The aim of the course is to provide an introduction to the use of computers as a tool to study a variety of physical, chemical and biological processes. An object-oriented approach will minimize technical detail. We welcome undergraduate and graduate students interested in simulation methods.

Topics/possible course projects

- Motion of the Pendulum
- Electrical Circuits
- Planetary Motion
- Chemical reaction kinetics
- Chaotic motion
- Biopolymer growth
- Monte Carlo methods
- Random walks
- Fractals
- Statistical mechanics models
- Molecular dynamics
- Quantum mechanical systems
- Diffusion
- Electrostatics
- Interference and Diffraction
- Fluid motion, Waves


Prior knowledge of Java is not required. Please contact the instructor for more details.

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