BIOL691/BINF739: Molecular Modeling for Biologists

Course Time: Tuesday, 7:20 pm – 10:00 pm

Location: Bull Run Hall 246, Prince William Campus

Instructor: Dmitri Klimov
Occoquan Building, Room 328B, Prince William Campus
703-993-8395
dklimov@gmu.edu
Office hours: by appointment

Required textbook: class uses online notes and materials

Class website: www.binf.gmu.edu/dklimov

Course Description: This course is designed for the students with the background in biology and who are interested in using computer modeling for biomolecules. The course consists of two parts. The first includes four lectures, describing the usage of modeling and visualization software, such as NAMD, Autodock, and VMD. During the second students work on individual research projects, which include docking of ligands to proteins, the effect of mutations on protein native structure, or protein unfolding. The course does not require prior knowledge of computational modeling, but involves some programming tasks.

Prerequisites: BIOL 213 Cell Structure and Function and BIOL 483 General Biochemistry or equivalent or permission of instructor. Working experience with Windows or Linux operating systems.

Grading Policy:
Homework 40%
Course project 60%

Academic Honesty Policy: Students are expected to follow the Honor Code. Academic dishonesty will not be tolerated in this class. Exams, projects, and homework must reflect individual work. If you have difficulty with the assignments, discuss it with the instructor.

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703/993-2474. All academic accommodations must be arranged through that office.
Course schedule for Fall 2013

Lecture 1, Aug 27
The basics of molecular modeling

Lecture 2, Sep 3
Practical application of molecular modeling

Lecture 3, Sep 10
Case studies of molecular modeling

Lecture 4, Sep 17
Course projects

After Sep 17 students work on their projects and meet with instructor on individual basis. Projects are due on Dec 3.