BME383J
Advanced Biomolecular Simulations
Fall 2009

Instructor: Pengyu Ren

Location and Time:
MW 10:30 to 12:00p
RLM 6.124

Course description:
This course will discuss advanced computational techniques for modeling biomolecular structure, dynamics and interactions. We will focus on sophisticated force field methods for modeling molecular interactions such as electrostatic forces, solvation, development of simulation algorithms for efficient sampling of thermodynamic and kinetic properties, and current applications to biomedicine and biotechnology.

Prerequisites: BME346/383J (dual level) Computational Structural Biology or equivalents.

Textbooks: None required.

Grading:
Two presentations and the media wiki report.
Grade by peers and instructor.

Office hours: Please email to make an appointment.

Course evaluation: using the approved MEC form

Knowledge, Abilities, and Skills Students Should Gain From this Course:

- Explain the theory behind molecular interactions, electrostatic, solvation and thermodynamic sampling.
- Derive the basic mathematic equations underlying the theory
- Perform numerical simulations using computing software

Course Schedule: http://water.bme.utexas.edu account required.

Privacy statement: Web-based, password-protected class sites are associated with all academic courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, electronic class rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1.

The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, contact the Office of the Dean of Students at (512) 471-6259.

The content of the syllabus is subject to change.