

Physical Chemistry of Nucleic Acids
CHM5503 (Fall, 2008)
Syllabus, July 2008

Instructor: Dr.Fenfei Leng, Department of Chemistry and Biochemistry

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Lecture: Monday, Wednesday, and Friday, 12:00-12:50 pm

Prereq: CHM 4304 or permission of the instructor. Attendance at all lectures and exam is required.

Reference books: *Nucleic Acids: Structures, Properties, and Functions* by Bloomfield, Crothers, and Tinoco (ISBN 0-935702-49-0), *Understanding DNA* by Chris R. Calladine, Horace Drew, Ben Luisi, and Andrew Travers, *DNA Topology* by Andrew D. Bates and Anthony Maxwell, and literatures.

Course Description: CHM 5503 is a core course for graduate students in the Department of Chemistry and Biochemistry. The course will introduce the structures and functions of nucleic acids, thermodynamics, ligand-DNA interactions, DNA topology, and more.

Office hours: Friday (4:00 to 5:00 pm).

Examinations and Grading: There will be one presentation (20%), one paper (20%), and one comprehensive final exam (40%) toward your final grade. Your attendance at classes (20%) will also contribute to your final grade. If you have questions regarding the grade, please see me immediately.

The instructor's expectations for students during the semester: The students will be responsible for all materials covered in lectures and assigned in the book. The students are expected to read the appropriate materials in the text before each class. The key to success is hard work.

Learning Outcomes: The overall goal of this course is for students to understand the basic principles and properties of nucleic acids. To this end, the following major learning outcomes shall apply:

1. Students will be able to understand structure and function of nucleic acids.
2. Students are expected to understand basic concepts of thermodynamics and conformation changes of nucleic acids.
3. Students will have a basic understanding of ligand-DNA interactions and DNA topology.

Tentative lecture and examination schedule:

Presentations (various times)

Paper due (various time, no later than December 5, 2008)

Comprehensive final exam (Friday November 7, 2008)

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.