CHM 335: PHYSICAL CHEMISTRY FOR BIOCHEMICAL SYSTEMS **Fall 2007**

Instructor: Cristina Suarez
Office: Sabin-Reed 334
Contact: csuarez@smith.edu / x3838
Office Hours : M 3:30-4:30 pm
R 9:00-10:00 am

Lab Instructor: Scott Edmands
Office: Burton 217
Contact: sedmands@email.smith.edu / x3637
Office Hours : W 1:00-2:00 and by appt.

Lectures: M, W and F 11:00-12:10 in Bass 204
(Fridays will be used as review/discussion periods where students will be expected to participate)

Laboratory: F 1:10-4:00 in Sabin-Reed 427

Textbook:
Physical Chemistry: Principles and Applications in Biological Sciences 4th Ed. by Tinoco Jr., Sauer, Wang.

Math help recommended:
Survival Guide for Physical Chemistry by Francl.
Applied Mathematics for Physical Chemistry by Barrante
Or any other Math help book

On Reserve (Science Library):

Physical Chemistry: Principles and Applications in Biological Sciences by Ignacio Tinoco, Jr., Kenneth Sauer, James C. Wang.
Publisher Englewood Cliffs, N.J. : Prentice-Hall, 1985 2nd ed [QH345 .T56 1985]

The Elements of Physical Chemistry by Peter Atkins.
Publisher New York : W.H. Freeman, c1997. 2nd ed. [QD453.2 .A87 1997]

Physical Chemistry with Applications to Biological Systems by Raymond Chang
Publisher New York : Macmillan Pub. Co. : London ; Collier Macmillan Publishers, c1981 2d ed [QD453.2 .C48 1981]

Physical Biochemistry by K.E. van Holde
Publisher Englewood Cliffs, NJ : Prentice-Hall, c1985 [QH505 .V27 1985]

Principles of Physical Biochemistry by Kensal E. van Holde, W. Curtis Johnson, P. Shing Ho.
Publisher Upper Saddle River, N.J. : Prentice Hall, c1998. [QP517.P49 V36 1998]

Course Content: An introduction to chemical thermodynamics, solution equilibria, enzyme kinetics, and biochemical transport processes. The laboratory focuses on experimental applications of physical-chemical principles to systems of biochemical importance.

Requirements: You must have completed CHM224 and MTH112 before taking this course. If not, permission from the instructor is required!

Exams: There will be three midterms and **no final**.
Midterm I: Monday 15th, October
Midterm II: Monday 19th, November
Midterm III: Wednesday 12th, December

Homework: Problem sets will be assigned during class. They are due the following week at 11:00!! Every student must complete all assigned work in order to obtain a passing grade. You will have a total of 3 grace days to be used at your discretion during the semester.

Laboratory: Attending the lab is mandatory. There will be a number of experiments and their corresponding assignments due throughout the semester. Unexcused absence from lab might result in not being able to make it up, and therefore an "E" in the lab portion of the course. If for any reason you cannot attend a lab session, please contact Scott Edmands to make arrangements. Lab guidelines will be handed to you during the first day of lab. You have 3 lab grace days to be used at your discretion during the semester. After that half a grade will be deducted from the report for every late day.

Software: The graphing program you should use is either *MS Exce*l for simple graphs or *Kaleidagraph 3.5* (installed in most computers on campus). Two mathematical packages for numerical and symbolic analysis are available to you: *MathCad* (available in Sabin-Reed 426) and *Mathematica* (available in most computers).

Every student must complete all assigned work in order to obtain a passing grade.

Grading: Grades will be determined based on 1000 points distributed as follows

Midterms 450
Homework 200
Class/Lab Participation 50
Lab 300

Ethics: You are strongly encouraged to collaborate with classmates on problem sets and course materials. Please, do not confuse "collaboration" with "**copying things that I don't know how to do from my collaborator.**" All homework and course assignments must reflect individual effort! When using the homework's grace days the tacit assumption is that you will not access the web site posting the answers. If in the laboratory you do an experiment with someone else, your written report must say with whom you did the experimental work, but the written work submitted for a grade **must be your own** unless the instructor indicates otherwise. Before you obtain data from someone else and use it in your own written report, you must ask for permission to do so from the instructor, and must state in the report from whom you obtained the data. Help each other, but make sure you learn on your own. Assignments should reflect the individual's original work. Collaborators should be acknowledged. **Presenting someone else's work as your own is a violation of the Honor Code**.