

Chemistry 460/395
Biophysical Chemistry
Fall 2009

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<u>Lecture</u>	<u>Date</u>	<u>Subject</u>
1	8/24	Introduction; Protein Composition
2	8/26	Protein Structure
3	8/31	Protein Structure (cont.)
4	9/2	Protein Stability & Non-covalent Interactions
5	9/9	Nucleic Acids: Comp. and Structure
6	9/14	Energy Minimization & Molecular Dynamics – Ken Olsen
7	9/16	Energy Minimization & Molecular Dynamics – Ken Olsen
8	9/21	Biological Membranes – Louis Deiss
9	9/23	Dialysis, Gel Filtration & Centrifugation
10	9/28	Electrophoresis & Viscosity - Miguel Ballicora
11	9/30	Mass Spectrometry – Paul Chiarelli
12	10/7	FIRST EXAM (lectures 1 through 11)
13	10/12	Ligand Interactions at Equilibrium
14	10/14	Kinetics of Ligand Interactions
15	10/19	Kinetics of Ligand Interactions
16	10/21	Isothermal Titration Calorimetry (ITC)
17	10/26	UV/Vis. & Fluorescence Spectroscopy
18	10/28	Circular Dichroism (CD)/MCD

Lecture	Date	Subject
19	11/2	IR and Raman Spectroscopy
20	11/4	X-ray Crystallography
21	11/9	NMR
22	11/11	NMR
23	11/16	EPR
24	11/18	Student Presentations
25	11/23	Student Presentations
26	11/30	Student Presentations
27	12/2	Student Presentations

The final examination will be given on M, 12/7, 4:00 - 6:00 pm, FH105, and will test the material covered in lectures 14 through 24.

Classroom: FH 105

Classtime: M, W 4:00 p.m. - 5:15 p.m.

Office Hours: M, W 2:00 p.m. - 3:30 p.m., FH 125-Holz or FH022-Freitas. Other times by appointment.

The Tutoring Center offers free small group tutoring and lab (drop-in) tutoring for Loyola students. The groups meet once a week through the end of the semester and are led by a student who has successfully completed study in the course material. To learn more or request tutoring services, visit the Tutoring Center online at www.luc.edu/tutoring.

Academic Integrity: Please refer to the policies on dishonest academic behavior in the Graduate or Undergraduate Studies Catalogs (for details see www.luc.edu/academics/catalog/undergrad/reg_academicgrievance.shtml).

Grading Policy: 100 points for each exam, and 100 points for the class presentation. No make-up exams will be given. A missed exam requires written supporting documentation from a physician or equivalent, and a score will be established based on the average of the remaining course assignments.

Class grades will be calculated by two separate methods. The method that provides the highest letter grade for a student will be used.

Method 1: The mean of the total raw scores for the class will be calculated and designated as the C+/B- cutoff. One-third of the standard deviation will be added or subtracted from the mean to arrive at the remaining grades. For example, a student must be one standard deviation above the mean to obtain a grade of A-.

Method 2: The following scale of total raw scores will be used to establish class letter grades:

A = 100-85
A- = 84-80
B+ = 79-75
B = 74-70
B- = 69-65
C+ = 64-60
C = 59-55
C- = 54-50
D+ = 49-45
D = 44-40
F = Less than 40

Suggested Textbooks:

Biophysics Textbook online: www.biophysics.org/btol

K.E. van Holde, W.C. Johnson, and P.S. Ho, Principles of Physical Biochemistry, second edition, Prentice-Hall, 2006.

I. Tinoco, Jr., K. Sauer, J.C. Wang, & J.D. Puglisi Physical Chemistry: Principles and Applications in Biological Sciences, fourth edition, Prentice-Hall, 2002.

Other Useful Texts

J.M. Berg, J.L. Tymoczko, and L. Stryer, Biochemistry, sixth edition, W. H. Freeman & Co., 2006.

I.H. Segel, Enzyme Kinetics, Wiley & Sons, 1993.

C. Cantor & P. Schimmel, Biophysical Chemistry, W. H. Freeman & Co., 1980. (Three volumes - a very good, but somewhat outdated reference text)

G. E. Schulz & R. H. Schirmer, Principles of Protein Structure, Springer-Verlag, 1979.

R. Gabler, Electrical Interactions in Molecular Biophysics, Academic Press, 1978.