

Chemistry 460/395
Biophysical Chemistry
Fall 2011

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<u>Lecture</u>	<u>Date</u>	<u>Subject</u>
1	8/29	Introduction; Protein Composition
2	8/31	Protein Structure
3	9/7	Protein Structure (cont.)
4	9/12	Protein Stability & Non-covalent Interactions
5	9/14	Energy Minimization & Molecular Dynamics
6	9/19	Nucleic Acids: Composition and Structure
7	9/21	Biological Membranes
8	9/26	Dialysis & Gel Filtration
9	9/28	Centrifugation, Diffusion & Sedimentation
10	10/3	Electrophoresis & Viscosity
11	10/5	Mass Spectrometry
12	10/12	FIRST EXAM (lectures 1 through 11)
13	10/17	Ligand Interactions at Equilibrium
14	10/19	Kinetics of Ligand Interactions
15	10/24	Kinetics of Ligand Interactions
16	10/26	Isothermal Titration Calorimetry (ITC)
17	10/31	UV/Vis. & Fluorescence Spectroscopy
18	11/2	Circular Dichroism

Lecture	Date	Subject
19	11/7	IR and Raman Spectroscopy
20	11/9	X-ray Crystallography
21	11/14	NMR
22	11/16	NMR
23	11/21	EPR
24	11/28	Student Presentations
25	11/30	Student Presentations
26	12/5	Student Presentations
27	12/7	Student Presentations

The final examination will be on M, 12/12, 4:00 - 6:00 pm, FH105, and will test the material covered in lectures 13 through 23.

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., FH022 or FH1255. Other times by appointment - contact instructor at dfreita@luc.edu or call Exts. 83091 or 87045 and leave a message.

By the end of the first week of classes, students who need special testing accommodations should give the instructor documentation that has been approved by the Services for Students with Disabilities (SSWD).

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 calculated 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:

<http://www.biophysics.org/ProfessionalDevelopment/SelectedTopicsInBiophysics/tabid/2311/Default.aspx>

D. Sheehan, Physical Biochemistry: Principles and Applications, second edition, Wiley-Blackwell, 2009.

G.G. Hammes, Physical Chemistry for the Biological Sciences, Wiley-Interscience, 2007.

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)