Biophysical Chemistry (Chem 8510)
Course Syllabus – Fall 2018

Instructors: This class is jointly taught by the biophysical chemistry group:
Markus Germann
Samer Gozem
Donald Hamelberg
Hamed Laroui
Ivaylo Ivanov
Gregory Poon
W. David Wilson

Lecture time and place: WF 1:50 – 3:35 P.M. in PSC 311.

Textbook: "**Principles of Physical Biochemistry**", 2nd Edition, van Holde, Johnson, Ho; Pearson-Prentice Hall; 2006. Although the book is out of print, it is available from a variety of new and used book suppliers, as well as online.

Supplementary course material: Extensive, current literature references will be provided to update and support many sections of the course. In some cases, class handouts will also be provided to cover material that is not in the text. There are a number of other biophysical texts in the library as well as online material and you should look over the same material presented in class in these other sources.

Homework: There will be approximately one homework assignment each class. You may consult any books, journal articles, and internet sites that you find helpful, but you may not consult with any person about the assignment until it has been submitted. Since homework is a major part of your grade, we are very serious about the requirement that it be only work that you have done on your own. There will be a 10% per day grade reduction for late homework and some homework that is discussed in class will only be accepted when it is due.

Grading: Homework/class participation: **40%**; Midterm Exam: **30%**; Final Exam: **30%**.

Department of Chemistry Student Integrity Policy: All homework assignments and tests taken must represent your individual, unaided efforts. To receive unauthorized outside information or to offer unauthorized information to another student during an examination is cheating. Any suspected offenses may be referred to the Chairman of the Department of Chemistry for appropriate action and may be further referred to the Office of the Dean of the College of Arts and Sciences.

Course Schedule:

Date	Topic	Lecturer
August 22	Overview and quantitative aspects of biomolecules – Chap. 1, 2	Wilson
August 24	Continue Protein folding, structures, and thermodynamics, Chap 1,2	Wilson
August 29	Nucleic acid folding, structures and thermodynamics - Chap. 1,2	Wilson
August 31	Nucleic acid folding, structures and thermodynamics - Chap. 1, 2	Wilson
September 5	Macromolecular hydrodynamics - Chaps. 5	Poon
September 7	Macromolecular hydrodynamics - Chaps. 5	Poon
September 12	Macromolecular hydrodynamics - Chaps. 5	Poon
September 14	Macromolecular hydrodynamics - Chaps. 5	Poon
September 19	Thermodynamics of biomolecules, Predictions Chap 2,4	Wilson
September 21	Principles of macromolecular structure, Chap 3	Ivanov, Gozem
September 26	Principles of macromolecular structure, Chap 3	Ivanov, Gozem
September 28	Principles of macromolecular structure, Chap 3, 4	Ivanov, Gozem

October 3	Computational Methods – macromolecules, Chap 3, 4	Ivanov, Gozem
October 5	**Midterm Exam**	
October 10	Computational Methods	Ivanov, Gozem
October 12	Introduction to spectroscopy - Chapters 9 – 11	Wilson
October 17	Macromolecular spectroscopy - Chapters 9 - 11	Wilson
October 19	Macromolecular spectroscopy Chapters 9 - 11	Gozem
October 24	Macromolecular spectroscopy - Chapters 9 – 11	Laroui
October 26	Macromolecular spectroscopy - Chapters 9 – 11	Laroui
October 31	Macromolecular spectroscopy, NMR - Chapter 12	Germann
November 2	Interaction Basics, Methods - Chapter 14	Wilson
November 7	Macromolecular spectroscopy, NMR - Chapter 12	Germann
November 9	Macromolecular spectroscopy, NMR - Chapter 12	Germann
November 14	NMR: Diffusion, Dynamics, Exchange, RDC, SAXS	Germann
November 16	Macromolecular Interactions 1 - Chapter 14	Wilson
November 19 - 23	Thanksgiving Day (Holiday)	
November 28	Macromolecular Interactions 2 - Chapter 14	Wilson
November 30	Macromolecular Interactions 2 - Chapter 14	Wilson
December 5, Wed.	**Final Exam, 10:45-13:15 pm**	