

Chemistry 341, (01:160:341), Fall 2013

Physical Chemistry of Biochemical Systems

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Fall 2013, Mondays and Wednesdays, 1:40 to 3pm, Room 203 SERC

This is a the first semester or a two-semester physical chemistry course with an emphasis on applications to biochemical systems and to life sciences. It will cover three main areas: biochemical kinetics, quantum chemistry and biochemical spectroscopy.

The course text is *Physical Chemistry: Principles and Applications in Biological Sciences*, by Tinoco, Sauer, Wang, Puglisi, Harbison and Rovnyak, 5th edition (Pearson, 2014). We will cover Chapters 5 and 9-15 this semester; the same text will be used in the Spring, covering the remaining chapters. The table below gives an approximate time schedule; detailed reading assignments will be made as the class proceeds

Class meetings	Subject	Chapter
Sep 4, 9, 11, 16	Introduction to structural biology	handouts
Sep 18, 23	Statistical foundations of biochemistry	5
Sep 25, 30, Oct 2, 7, 9	Biochemical kinetics	9, 10
Oct 16, 21, 23	X-ray crystallography	15
Oct 28, 30, Nov 4, 6, 11	Quantum and classical mechanics	11, 12
Nov 18, 20, 25, Dec 2	Optical spectroscopy	13
Dec 4, 9, 11	Magnetic Resonance	14

The course website is <http://casegroup.rutgers.edu/notes.html>. Reading and homework assignments and additional course materials will be posted there. There will be three exams: Oct. 14 and Nov. 13 (in-class), and the final exam (Wed., Dec, 18, 8-11am). The course grade will be determined by homework and projects(20%), the mid-term exams (each 20%), and the final examination (40%).