

**CHEM 3130: Chemical Systems III**  
**Biophysical Chemistry**  
Spring Quarter, 2001  
Olin 103, 9:00-9:50 a.m.

**Instructor:** Bruce E. Bowler  
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**Topics:**      **Electron Transfer in Biological Systems**

**Readings:**    “Electron Transfer” Gray and Ellis, Chapter 6 in  
*Bioinorganic Chemistry*, Bertini, Gray, Lippard, etc.  
“Electron Transfer in Proteins” Gray and Winkler  
*Ann. Rev. Biochem.* 65, 537-561 (1996).

**Photosynthesis and Light Harvesting**

**Readings:**    Nelson and Cox, *Lehninger Principles of Biochemistry*, 3<sup>rd</sup>  
Ed. Chapter 19, pp. 691-714  
“Structure of Light Harvesting Antenna Complexes of  
Photosynthetic Bacteria, Cyanobacteria and Red Algae” H.  
Zuber *TIBS* 11, 414-419 (1986).  
“Structure and Function of Bacterial Light-harvesting  
Complexes” W. Kuhlbrandt *Structure* 3, 521-525 (1995).  
Cantor and Schimmel, *Biophysical Chemistry*, Part II, pp.  
390-398 and 449-454.

**Helix Coil Theory**

**Readings:**    Cantor and Schimmel, *Biophysical Chemistry*, Part  
III, Chapter 20.

**Protein Folding**

**Readings:**    Cantor and Schimmel, *Biophysical Chemistry*, Part  
III, Chapter 21.

**Course Structure:**    Three 1 hour **lectures** per week

**Weekly Quizzes:** Each Monday, starting April 9<sup>th</sup>, there will be a short in-class quiz (except the Monday of the mid-term exam). Since Memorial Day is Monday May 28, the quiz that week will be on Wednesday, May 30<sup>th</sup>. Each quiz will be worth 25 points, for a total of 200 points during the quarter (this is 40% of your grade).

**Mid-term exam:** Monday, April 30<sup>th</sup>, 150 points.  
Material from first half of course.

**Final exam:** Wednesday, June 6<sup>th</sup>, 10:00-11:45 AM, 150 points.  
Material from second half of course.