BIOC 481.90: Biochemistry

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Overview: In the first semester of Biochemistry you will be introduced to the components of Biochemistry and how they are organized within the cell and cellular systems. We will review the driving forces of interaction and stability as well as the global architecture of the science of biochemistry. The components to be studies are, nucleic acids, proteins and lipids and carbohydrates. These components are needed as a basis for understanding the metabolic pathways covered in the second semester. This course should cover the first three parts of your textbook. Additional material will be introduced to supplement various areas covered by this material and this supplemental information will be distributed during class.

Requirements: Students are encouraged to read the chapters prior to the corresponding lectures. Questions or problems sets will be assigned for each chapter. These will not be collected or graded, however, similar questions can be expected on quizzes and tests.

Tests, quizzes, and assignments: There will be an in-class quiz the Friday before each midterm covering material you are expected to know for the exam in addition to quizzes at the conclusion of each major topic subdivision. There will be three midterm exams, and a comprehensive final exam. There will be four take home assignments. You may work together on these assignments (unless specified) but must write up the work and turn it in yourself. If you work with other students these must be cited as “co-authors” at the top of your paper. The average of your quizzes and take-home assignments will count as one midterm test grade. You may drop your lowest grade (one assignment or two quizzes). This includes missed quizzes (makeup quizzes will not be given) or assignments you fail to turn in on time. The final exam counts the same as a midterm exam. Midterm exams will be held at 7pm on three evenings during the semester, as noted below.
Tentative class schedule:

September 5-7  
Biochemistry, microscopy (Ch. 1)

September 10-14  
Water, pH, Ionic Equilibria  (Ch. 2)

September 17-21  
Thermodynamics (Ch. 3)

September 24-28  
Nucleic Acids (Ch 4)

October 1-5  
Primary Protein Structure (Ch. 5)

Midterm exam 1 (chapters 1-4)  
Wednesday, October 3 at 7:00 pm  
CP109

October 8-12  
Recombinant DNA  (G&G Ch. 13)

October 15-19  
Tertiary Protein Structure (Ch.6)

October 22-26  
Protein Function (Ch.7)

October 29-November 2  
Molecular Motors (Ch. 8)

November 5-9  
Carbohydrates (Ch. 9)

Midterm exam 2 (chapters 5-8)  
Wednesday, November 7th at 7:00 pm  
CP109

November 12  
Veterans’s Day no class

November 14-16  
Lipids and Membranes (Ch 10)

November 19  
Cellular and Membrane Transport (Ch. 10)

November 21-23  
Thanksgiving Day Holiday no class

November 26-30  
Biological Catalysis (Ch. 11)

December 3-7  
Enzyme Kinetics (Ch. 11)

Midterm exam 3 (chapters 8-11)  
Wednesday, December 5th at 7:00 pm  
CP109

December 10-14  
Metabolic Control (Ch. 12)

Final examination (comprehensive)  
Wednesday December 19, 2001 8:00 - 10:00  
FA302