

**Biochemistry of the Cell I**  
**BC 367**  
**Fall 2009**

**Instructor:**

Julie Millard, Dorros Professor of Life Sciences  
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**Office Hours:**

As announced in class each week and also by appointment. Please do not hesitate to make an appointment if you cannot make the scheduled times.

**Course Goals:**

We will focus on the biological molecules, chemical reactions, and regulatory processes that are essential to the functioning of the cell, stressing the development of problem-solving, critical-thinking, and communication skills in both the lecture and laboratory. Topics include the structures and functions of the major classes of biological molecules (proteins, carbohydrates, nucleic acids, and lipids) and enzyme kinetics and mechanisms.

**Text:**

Lehninger's Principles of Biochemistry; 5th Edition  
by David Nelson & Michael Cox (2005); Worth Publishers.

**Course Webpage:** <http://www.colby.edu/chemistry/CH367/index.html>

**Lecture Topics:**

<u>Topic</u>	<u>Reading in Text</u>
Introduction, Water, & Buffers	CH 1, 2
Amino Acids, Peptides, and Proteins	CH 3
Three-Dimensional Structures of Proteins	CH 4
Protein Function	CH 5 (to pg. 170)
Enzyme Kinetics, Mechanisms, & Regulation	CH 6
Carbohydrates	CH 7
Nucleic Acids	CH 8, 9 (skim)
Lipids	CH 10

**Exams:**

In-class exams are on **Thursday, October 8** and **Thursday, November 19**. The final exam is scheduled by the Registrar. Please plan accordingly, as there are no make-up exams. If you miss an exam for a medical reason, you must request communication from your medical professional directly to Prof. Millard. Exams are written to be completed during the allotted class period. Some students may have approval from the Dean of Students Office for time

extensions on exams, in which case appropriate arrangements should be made with the instructor prior to the week of the first exam.

**Discussion Section:**

Good communication, both written and oral, is an essential scientific skill. You will have ample opportunities to communicate your biochemical knowledge both in class and in the weekly discussion section. Most weeks, you will receive a problem set that you are to complete for the Friday meeting, where you will have the opportunity to volunteer to present the questions. Please neatly write or type out each problem separately on its own sheet of paper: some weeks you will be asked to turn in one or more problems, so you should always be prepared for this possibility. You should get together with other people in the class to begin working through these problems shortly after they are assigned. The principal goal of these problem sets is to stimulate discussion, not necessarily for you to obtain the “right answers,” so please do not try to “check your answers” with Prof. Millard before discussion section. You will be graded primarily on your effort and your ability to communicate effectively. While there are no excused absences from discussion section, if you know you are going to be absent because of a planned event such as an interview or athletic competition, you must notify Prof. Millard and turn in your written problem set *before* discussion section.

**Class Participation:**

You are expected to come to class each period prepared to participate. You are responsible for all material presented in each class, as well as all assigned readings, which should be done before the relevant class. Attendance is mandatory; unexcused absences will be penalized at Prof. Millard’s discretion.

**Intellectual Responsibility:**

Any work submitted in your name is to be your work alone, except that throughout the course each student may of course exchange experimental details and data with her/his lab partner and classmates. You may discuss material for problem sets and labs with others but merely copying answers is prohibited. Laboratory papers are also to be individual efforts, including finding primary literature for your paper. Any violation will result in an F in the course.

<b>Grading:</b>	<b>with laboratory</b>	<b>without laboratory</b>
Hour Exams	35%	50%
Discussion & Participation	20%	20%
Final Exam	20%	30%
Laboratory	25%	---