

CHEM 463/563 and BIOL 483

MW 7:20-9:00 PM, Science & Tech 1, Room 131

Instructor: Barney Bishop

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Required Text: Lehninger Principles of Biochemistry, 4th Ed., D. Nelson and M. Cox

Required Equipment: i>Clicker

Optional Text: The Absolute, Ultimate Guide to Lehninger Principles of Biochemistry, 4th edition, Osgood and Ocorr

Course Description

Although this course is the first semester of a two-semester general biochemistry sequence, it is intended to provide students taking only the first semester course a general introduction to biochemistry. We will begin with a brief introduction to biochemistry and the major macromolecules of life: proteins, carbohydrates, nucleotides, and lipids. This will be followed by an in-depth look at proteins, and their structure, function, kinetics, and regulation. We will then move on to the metabolism, touching on some of the major metabolic pathways. Lectures will then focus on a more in depth examination of nucleic acids, carbohydrates, amino acids and lipids. We will be following the book closely and lecture notes will be posted on my webpage ahead of time. In the lectures I will strive to explain the concepts covered in the book and provide additional details for clarification.

Goals of this course:

- 1.) Introduce students to the language of biochemistry.
- 2.) Illustrate to students the chemical principles and mechanisms involved in biological systems and processes.
- 3.) Familiarize students with the major biomolecules and biomacromolecules.
- 4.) Provide students a basic understanding of major metabolic pathways.

It is recommended that students read the assigned material before lecture and revisit sections in the chapter that are stressed in the lecture. No homework will be assigned*, but students are encouraged to work through problems at the end of assigned chapters and the study guide. Doing so, will provide you an opportunity to gauge your understanding of the material.

Biochemistry is a broad and complicated subject with a unique language, which adds to the difficulty. It is important that each student commit to spending significant hours outside of lecture reviewing the material and working through problems. **If you are unable to make this commitment you are unlikely to perform well in the class and may want to consider taking it at another time.**

If you wish to get the most out of the class and earn a grade you can be proud of you might consider the following study tips:

1. Read the assigned pages before coming to class. You'll be surprised how much easier it is to follow and understand the material if you are at least somewhat familiar with it before class begins.
2. Work through problems early and often and solve them before looking up the answers in the back of the book. You will quickly find out what you do and do not know when you begin answering problems. You might even find a similar problem on a quiz or exam. Study guides which contain biochemistry problems are also useful.
3. Study with fellow students. Get together with your classmates regularly to go over what was covered in class that day or week and make sure everyone understands the material.
4. Ask questions. Don't be afraid to raise your hand in class and ask for clarification of something I just covered. Don't be afraid to talk to me after class about something you don't understand. I like nothing better than helping a student learn to love biochemistry.

I will do my best to post lecture notes on my web page a day or two ahead of time. Feel free to download these files and take them to class with you as it may make it easier to follow the lecture.

i>Clicker

This year each student will be required to have/use an i>clicker in class. Students need to go to <http://www.iclicker.com/registration> and register their i>clicker before the third lecture (01/30/08). When registering your i>clicker, use your G# for your student ID.

Quizzes

In each lecture, there will be 1-4 slides, containing multiple-choice quiz questions. When these slides come up in lecture, you will be allowed a 1-2 minutes (depending on difficulty and number of questions) to answer the questions using your i>Clicker. Your responses will be recorded and scored. Your performance on these quizzes will count towards 10% of your final grade in the class. Therefore, it is essential that you attend every lecture and bring your i>Clicker to class with you to every lecture. Unless you have made prior arrangements with me, you will receive a grade of "0" for each lecture that you miss. Each student must use their own i>clicker and enter their own responses to quiz questions.

Grading and Examination Policy

The grading for this course will be based upon quiz grades, three in-class exams and one final exam. Each exam will be worth 100 points and will make up the remaining 90% of your grade. The final exam will only cover the material of the last quarter of the class and will not be cumulative. Exams will cover the material discussed in lecture as well as the assigned reading from the book and will be overwhelmingly, although not necessarily exclusively, multiple choice (scantron forms required). I reserve the right to ask questions on material assigned in the reading but not covered in lecture. Students will be expected to memorize pertinent information and be able to apply concepts learned in class to hypothetical situations.

A grade of 0 (zero) will be assigned if an exam is missed. Points for all four exams will be combined and the percentage determined by dividing the number of points received by the total number of points available (400, or 500 for the graduate students). This score will contribute 90% of your final grade with the remaining 10% coming from your quiz grades. **No extra credit will be given apart from designated exam questions.** If you are going to miss an exam you must contact me ahead of time with a legitimate reason. If you are too sick to study for the exam or to take it, you need to bring me a note from your doctor or the ER.

Chem 563

Students taking this class at the graduate level will be required to complete the same requirements as the undergraduate students. In addition, they will be required to read various assigned papers from the literature throughout the semester and write summaries of these articles. These summaries will count as a fifth exam (for 100 points), which will be factored in with the exams in determining your final grade.

An absolute grading scale cannot be determined until all scores have been compiled and evaluated. As a general rule, however, the following scale will be followed as closely as possible:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
<60%	F

A plus (+) or minus (-) may be added to a grade at the instructor's discretion.

Honor Code

All students are expected to adhere to the University Honor Code: "Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work." If you are caught cheating on an exam you will have your exam taken away from you and will be asked to leave the room. The violation will be reported to the Honor Committee and you will be prosecuted to the fullest extent possible.

Note: Cell phones and beepers are not allowed in this class. If they go off, you go out the door.