

**Syllabus for BCMB 4010/6010
Biochemistry and Molecular Biology I
Fall Semester, 2003
Claiborne Glover**

General

BCMB 4010/6010 (Biochemistry and Molecular Biology I) is the first semester of a two-semester sequence in biochemistry and molecular biology (the second semester is BCMB 4020/6020, Biochemistry and Molecular Biology II). BCMB 4010/6010 is currently taught in the Fall by Dr. Glover, and BCMB 4020/6020 is taught in the Spring by Drs. Michael Adams and Alan Przybyla. The sequence is intended to be a coherent, integrated year, and the same text is used for both semesters. The course meets Sixth Period (1:25-2:15 PM) MWF in C127 Life Sciences.

The prerequisite for BCMB 4010/6010 is CHEM 2211 (Modern Organic Chemistry I) or the equivalent. My philosophy of biochemistry can be summarized typographically as bioCHEMISTRY, so this prerequisite should be taken seriously. No prior exposure to biochemistry or molecular biology is required or assumed.

Text

The text for the course is Biochemistry, 2nd edition, by Reginald Garrett and Charles Grisham.

Reserve Materials

A list of reserve materials is attached. One copy of each item is on Reserve in the Science Library; the last three items are also available electronically (go to <http://gil.uga.edu/> and click on "Course Reserves"). The password for electronic access will be made available via WebCT (see below). The only assigned reserve readings will be Kyte, Chapter 2 and Abeles et al., Chapter 11. Additional materials may be added as the semester progresses.

WebCT

The WebCT site for BCMB 4010/6010 includes the syllabus, a full set of lecture notes (not very pretty but they are there), resources for getting and using Kinemage, RasMol, and Chime (see below), plus the usual email, bulletin board, and other functions. I will also occasionally make announcements on the HomePage. The site can be reached through the UGA WebCT homepage at the following address: <http://webct.uga.edu/>. To gain access to the course, log on with your UGA MyID username and password. Information on how to use WebCT is available from the UGA WebCT homepage.

Chime Project

Each student will prepare a brief report on a protein (or nucleic acid) for which a three-dimensional structure is known. Specifically, each student will 1) select and retrieve a structure from the Protein Data Bank (PDB), 2) retrieve relevant references from the National Library of Medicine (NLM), and 3) prepare a brief report on the structure to be submitted as a Presentation in WebCT. In addition to the text, the report should include at least three Chime animations that illustrate relevant aspects of the protein's structure and/or function and at least three references. Web addresses for RasMol, Chime, PDB, and NLM and tips on the use of these resources are available on WebCT. A sample Presentation is also available.

Computer Rooms

Computer rooms are located on the first floor of C tower in the Life Sciences Building, Rooms C118, C116, and if necessary C110. The computers in these rooms provide word processing capabilities, resources for molecular graphics (including RasMol and Chime), and access to the internet. Teaching Assistants will hold office hours in these rooms.

Grading

The graded portion of the course consists of four tests, the project, and the final (attendance at lectures is highly encouraged but not graded). The four tests count 15% each, the project 15%, and the final 25%. The final is quasi-cumulative: half of the final will cover the new material since the fourth test; the other half will cover the entire semester's work. If you believe there has been an error in the grading of a test, you should contact the grader who graded the question, and then me if necessary. Grade changes will be considered up until the time of the next test. Under extenuating circumstances a test may be postponed, but you must notify me of the circumstances (preferably via email) *prior* to the test. An unexcused absence from a test may result in a grade of zero.

Academic Honesty

Students are expected to adhere to the Academic Honesty Policy of the University of Georgia (http://www.uga.edu/ovpi/academic_honesty/academic_honesty.htm). With regard to BCMB 4010/6010, you are welcome to use ANY resource to learn the material - me, your classmates, other professors, other textbooks, commercial outlines, anything that helps you - but you are to use only your own mind (and a scientific calculator) on the tests and the final. Similar reasoning applies to the project: you may use any resource to learn how to use Rasmol, Chime, PDB, and NLM, but the actual project should be yours alone, including the choice of protein, the writing of the paper, the design of the Chime animations, etc.

Instructor

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 Office hours: 2:30-3:30 PM MWF, A410 (or A404A) Life Sciences.

Teaching Assistants

Office hours and contact information for the TA's will be posted on WebCT.

CALENDAR

<u>Date</u>	<u>Garrett and Grisham</u>	<u>Reserve</u>
Aug 18	Introduction	
Aug 20	Chapter 1 Chemistry	Kyte, Chapter 2, pages 41-47
Aug 22		
Aug 25	Chapter 2 Water, pH	Kyte, Chapter 2, pages 47-54
Aug 27		
Aug 29	Chapter 3 Thermodynamics	Abeles et al., Chapter 11, pages 300-309

Sep 1	HOLIDAY		
Sep 3			
Sep 5			
Sep 8	TEST 1		
Sep 10	Chapter 4	Amino Acids	Kyte, Chapter 2, pages 58-70
Sep 12			
Sep 15	Chapter 5	Proteins 1°	
Sep 17			
Sep 19			
Sep 22	Chapter 6	Proteins 2° 3° 4°	
Sep 24			
Sep 26			
Sep 29	TEST 2		
Oct 1	Chapter 7	Carbohydrates	
Oct 3			
Oct 6	Chapter 8	Lipids	
Oct 8			
Oct 10	Chapter 9	Membranes	
Oct 13	PROJECT DUE - PHASE I		(Oct 14 = Midpoint Withdrawal Deadline)
Oct 15			
Oct 17	Chapter 10	Membrane Transport	
Oct 20			
Oct 22	TEST 3		
Oct 24	Chapter 11	Nucleotides	Kyte, Chapter 2, pages 54-58
Oct 27			
Oct 29	Chapter 12	Nucleic Acids	
Oct 31	HOLIDAY		
Nov 3			
Nov 5	Chapter 13	Recombinant DNA	
Nov 7			
Nov 10			
Nov 12	TEST 4		
Nov 14	Chapter 14	Enzyme Kinetics	
Nov 17			
Nov 19			
Nov 21	Chapter 15	Enzyme Regulation	
Nov 24	PROJECT DUE - PHASE II		
Nov 26	HOLIDAY		
Nov 28	HOLIDAY		
Dec 1			
Dec 3	Chapter 16	Enzyme Mechanism	
Dec 5			
Dec 8			
Dec 15	FINAL EXAM (12:00-3:00 PM, location to be announced)		