

Syllabus for BCMB 4010/6010
Biochemistry and Molecular Biology I
Fall Semester, 2002
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 available in the Science Library is attached. One copy of each item is on Reserve in the Science Library. The last three items are also available via electronic reserve (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 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. The four tests count 15% each, the project 15%, 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 first contact the grader who graded the question, and then me if necessary. Changes to a grade on Test N will only be considered up until the time of Test N+1.

Academic Honesty

The Academic Honesty Policy of the University of Georgia will be strictly enforced. The formal description of this policy can be found at the following Web address: 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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Teaching Assistants

To be arranged. 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 19	Introduction	
Aug 21	Chapter 1 Chemistry	Kyte, Chapter 2, pages 41-47
Aug 23		
Aug 26	Chapter 2 Water, pH	Kyte, Chapter 2, pages 47-54
Aug 28		
Aug 30	Chapter 3 Thermodynamics	Abeles et al., Chapter 11, pages 300-309

Sep 2	HOLIDAY		
Sep 4			
Sep 6			
Sep 9	TEST 1		
Sep 11	Chapter 4	Amino Acids	Kyte, Chapter 2, pages 58-70
Sep 13			
Sep 16	Chapter 5	Proteins 1 ^o	
Sep 18			
Sep 20			
Sep 23	Chapter 6	Proteins 2 ^o 3 ^o 4 ^o	
Sep 25			
Sep 27			
Sep 30	TEST 2		
Oct 2	Chapter 7	Carbohydrates	
Oct 4			
Oct 7	Chapter 8	Lipids	
Oct 9			
Oct 11	Chapter 9	Membranes	
Oct 14	PROJECT DUE - PHASE I		(Oct 15 = Midpoint Withdrawal Deadline)
Oct 16			
Oct 18	Chapter 10	Membrane Transport	
Oct 21			
Oct 23	TEST 3		
Oct 25	Chapter 11	Nucleotides	Kyte, Chapter 2, pages 54-58
Oct 28			
Oct 30	Chapter 12	Nucleic Acids	
Nov 1	HOLIDAY		
Nov 4			
Nov 6	Chapter 13	Recombinant DNA	
Nov 8			
Nov 11			
Nov 13	TEST 4		
Nov 15	Chapter 14	Enzyme Kinetics	
Nov 18			
Nov 20			
Nov 22	Chapter 15	Enzyme Regulation	
Nov 25	PROJECT DUE - PHASE II		
Nov 27	HOLIDAY		
Nov 29	HOLIDAY		
Dec 2			
Dec 4	Chapter 16	Enzyme Mechanism	
Dec 6			
Dec 9			
Dec 12	FINAL EXAM (12:00-3:00 PM, C127 Life Sciences)		