

Introductory Biochemistry
BioSc 1000 Summer 6W2 2004

Course Information

INSTRUCTOR	Dr. Lydia B. Daniels A234 Langley Hall, 412-624-4261 E-mail: lydiad@pitt.edu
CLASS SCHEDULE	Lecture: Mon. – Thurs. 8:30 a.m. – 10:15a.m. 169 Crawford Hall As a courtesy to your colleagues, please silence your cell phones and pagers before entering class.
OFFICE HOURS	Before (about 8:15 a.m.) and after every lecture and by appointment
COURSE WEB SITE	Information about and documents for this course are available to registered students at http://courseweb.pitt.edu . I will make available all lecture handouts online prior to class and ask that you print out a copy before coming to lecture each day. Following each lecture, I will post my lecture notes on the site for your reference. Last year's exams are also available.
COURSE GOAL	To teach you enough biochemistry to make you dangerous. Biochemistry is a tool that helps us understand everything in the natural world, from how an organism interacts with and changes its environment to how it develops from a single cell. My goal is to introduce you to key concepts in thermodynamics, molecular structure and function, and biologic networks so you will be able to make informed decisions about ecological, medical, and political issues related to living things.
COURSE OBJECTIVES	After completing Biochemistry 1000, you will be able to <ul style="list-style-type: none"> • describe the underlying chemical and physical principles governing living systems. • explain how changes in molecular structure drive the chemical reactions necessary for life. • outline the major pathways involved in fuel molecule storage and catabolism. • recall the general structures of the 4 classes of biomolecules and specific structures of key metabolic intermediates. • recognize the connectivity of catabolic and synthetic pathways. • predict the metabolic effects of pathologic changes to molecular function. • apply your understanding of the concepts to solve problems.
TEXTBOOK	Essential Biochemistry (2004) Pratt and Cornely, John Wiley and Sons, Inc. Because this text presents only the basics of structure and function, I expect that you will read the assigned chapters before attending class so we can spend lecture time on more advanced material. Information presented in the text will be on the exams, regardless if it is reviewed during lecture.
RESERVE MATERIALS	The following texts are on reserve in Langley Library. These texts present the same basic information as your textbook but in greater detail. <ul style="list-style-type: none"> • Fundamentals of Biochemistry (1999) Voet, Voet & Pratt • Biochemistry (2003) Voet & Voet • Lehninger Principles of Biochemistry (2000) Nelson & Cox

	<ul style="list-style-type: none"> • Biochemistry (1995) Stryer • Biochemistry (1999) Matthews and van Holde • Principles of Biochemistry (2003) Horton et al.
ATTENDANCE	Attendance at lectures is strongly recommended because that is where you will learn how the factual information presented in the textbook informs the details of metabolism. Information will be presented in lecture that is not in the textbook, and you will be expected to know this material for the exams.
EXAMINATIONS (80% OF FINAL GRADE)	As shown on the syllabus, there will be 4 exams, each worth 80 points. The exams will be primarily multiple-choice questions and 2-3 short answer questions. I will drop the lowest exam score when determining your final grade. No early, late or make-up exams will be given.
WEEKLY PROBLEMS (20% OF FINAL GRADE)	<p>There will be 5 problems provided during the term; each problem set is worth 15 points and I will drop the lowest score when determining your final grade.</p> <p>I will give you the problems on Monday of each week and they are due before the end of lecture on the following Monday. Because I think there is great value in completing these assignments, I would rather accept a late paper than not receive one from you. However, stragglers slow down the grading process for everyone. Thus, I have the following policy: Papers submitted a day or two late will be accepted, but evaluated with little incentive to be generous. Papers submitted more than two days late will not be read unless, before the due date, you have provided me with a compelling reason to accept late work.</p> <p>Most of these problems will involve reading a science article and responding to it in a 1-2 page essay; consequently I expect these papers to be neatly typed, grammatically correct, and sources of information beyond the recommended readings acknowledged with citations and a reference list.</p> <p>You are encouraged to discuss these problems with your colleagues and consult other sources, but you must submit an independent answer. If you submit a paper wherein parts of the text are taken verbatim or in a lightly modified version from published sources, you will be penalized for plagiarism. Likewise, students submitting identical essays or lightly modified versions of the same essay will be penalized for plagiarism.</p>
DISPUTING GRADES	<p>Exams: The multiple-choice part of each exam will be graded electronically. If you believe that you have found an error in the answer key, let me know immediately. If I have made a mistake in the answer key, then I will have all of the exams re-graded and adjust your scores accordingly. If you believe that a problem has been incorrectly scored, after you have reviewed the posted answers, your notes, and your textbook, then you may request that I re-grade that problem. This request must be in writing, within 48 hours of receiving your graded exam, documenting why you believe your answer is correct.</p> <p>Weekly Problems: A general grading rubric will be provided with the first problem so that you will know how your answer is to be assessed before you turn it in. Unique evaluation criteria, when appropriate, will be detailed on the assignment handout. I would be happy to discuss my evaluative methods with you outside of class at any time.</p>

DETERMINING YOUR FINAL GRADE	Your final grade will be based on 300 points. These points consist of your best 3 of 4 exam scores (maximum points = 240) and your best 4 problem set scores (60 pts). Traditionally, final grades in this course have been curved and the grade distribution ranges have been about 12- 15% A, about 30 -35% B, about 30-35% C, about 20% D or lower. Please note that past performance is only a rough predictor of any single term's grade distribution. The greater the number of total points you earn, the higher your grade. If you earn 90% of the total points or more, you will earn some flavor of "A"; if you earn less than 60% of the total points your will earn a "D" or lower.
STUDENTS WITH DISABILITIES	If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both me and the Office of Disabilities Resources and Services, 216 William Pitt Union, 412-648-7890/412-383-7355 (TTY) as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.
ACADEMIC INTEGRITY	<p>Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity: Student Obligations. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include the confiscation of an examination of any individual suspected of violating University Policy.</p> <p>Whereas I encourage you to work together outside of class to learn the material, please remember that submitting an exact copy of another student's answer, or material from a source publication, as your own work is a violation of the University's policy on plagiarism. Even if you work as part of a group to solve the problems, please put your answer in your own words.</p>
HELP	Biochemistry is a quantitative science with a large vocabulary of terms and structures; we have much information to assimilate in a short period of time. I strongly encourage you to form study groups, to work the practice problems in your textbook, and to attend office hours as your schedule allows. The Academic Support Center, 311 William Pitt Union (412-648-7920), can help you improve your basic study skills, and this service is free for University students, faculty and staff.

Biochemistry (BioSc 1000) Summer 2004 6 week 2

Day	Date	#	Topic	Text Readings (Chap: sections)	Deadlines
Mon	6/21	1	The chemistry & physics of living organisms	1: 1-3 2: all	
Tues	6/22	2	Nucleotides & nucleic acids	3: 1,2; 9.2; 17:4; 19: 3,4	
Wed	6/23	3	Techniques of biotechnology	3: 3-5	Add/Drop Period ends
Thurs	6/24	4	Amino acids & protein structure	4 all	Review session 10:30 am to noon, A220 Langley
Mon	6/28	5	Protein function	4	Problem Set 1 Due
Tues	6/29	6	Protein function, contd.		
Wed	6/30		EXAM 1 (Lectures 1-5)		
Thurs	7/1	7	Enzyme catalysis	6 all	<i>Review session 10:30 am to noon, A220 Langley</i>
Mon	7/5		University Holiday, No Class		
Tues	7/6	8	Enzyme kinetics	7 all	Problem Set 2 Due
Wed	7/7	9	Membranes	8 all	
Thurs	7/8	10	Overview of intermediary metabolism	9 all	No review session
Mon	7/12	11	Glycogen metabolism	10:1	Problem Set 3 Due Review session 10:30 am to noon, A220 Langley
Tues	7/13		EXAM 2 (Lectures 6-10)		
Wed	7/14	12	Glycolysis/gluconeogenesis	10: 2-4	
Thurs	7/15	13	Regulation of glucose metabolism	16: 2,3	<i>Monitored Withdrawal deadline—Fri—7/16</i> Review session 10:30 am to noon, A220 Langley
Mon	7/19	14	Citric acid cycle	11 all	Problem Set 4 Due
Tues	7/20	15	ETC & oxidative phosphorylation (Bioenergetics)	12 all	
Wed	7/21	16	Photophosphorylation	13 all	Review session 10:30 am to noon, A220 Langley
Thurs	7/22		EXAM 3 (Lectures 11-15)		No review
Mon	7/26	17	Anabolic lipid metabolism	14:2, 3	Problem Set 5
Tues	7/27	18	Catabolic lipid metabolism	14:1	
Wed	7/28	19	Amino acid catabolism	15:2,5,6	
Thurs	7/29	20	The metabolic network	16: 1,4	Review session 10:30 am to noon, A220 Langley
Mon.	8/2		EXAM 4 (Lectures 16-20)		

Nota Bene: The instructor reserves the right to make changes to this syllabus if such changes are necessary to improve delivery of this course.