

BIO 325 is the first-semester biochemistry course offered by the Department of Biological Sciences to its majors and to Health Sciences students. BIO 326 is the optional lab course, offered Fall semesters. BIO 425 - BIOCHEMISTRY II – completes intermediary metabolism and adds a comprehensive review of the biochemistry of gene expression. CHM 453 focuses more on chemical mechanisms and less on biological context than BIO 325.

TEXT: *Biochemistry, 3rd Edition* by Reginald Garrett and Charles Grisham. 2005 Thomson*Brooks/Cole. ISBN: 0-534-49034-4

Note: Prof Dvir and I have arranged for this to be published for Oakland students as two half-books, so that students taking only BIO 325 will need only buy the (cheaper) first half-book. Students choosing to take BIO 425 will use the second half-book. (Some chpts from the 2nd half will be studied in this course by the provision of additional materials.)

EXAMS AND GRADING: There will be four tests, each of which will count 25% toward the course grade. The tests will use a variety of testing styles, including multiple choice, fill-in-the-blanks, matching, problem-solving, short answer, and short essay.. Problems will require numerical computation (bring a calculator). Essays will require you to organize your thoughts prior to writing. The direction for all multiple-choice questions will be the same: "Choose the one best answer."

Submit any grading disagreements in writing, along with your copy of the test. I will base a decision on the logic of your argument.

If a class is cancelled for any reason, the whole schedule - including tests - will be set back one day (at least temporarily).

STYLE OF COURSE: Lecturing will be the predominant style. I will use PowerPoint projections and provide photocopies of most slides. My lectures will complement the text. You are responsible for everything in the lectures and also for all of the corresponding parts of the text.

On the two-out-for-one-in theory, you should expect to spend three hours a day outside of class reviewing the study material and doing practice exercises.

BACKGROUND EXPECTATIONS: I assume your recent exposure to cell and molecular biology at the level of our BIO 111 course, including some knowledge of macromolecular structure and function, cell structure and organelle specialization, energy and information flow in the cell, and genetics from the Mendelian to the molecular level. I assume a good recent one-year course in general chemistry. Only a small amount of organic chemistry (structural formulas, COHN geometry, and common organic functional groups) is used so we have removed the organic chem pre-requisite. Finally, I will presume that you can handle simple mathematical procedures and conversions, light algebraic manipulations, and the use of graphical representations.

ELECTRONIC AIDS: Visit our *class Web site*, at <http://www.oakland.edu/>. Click on "Info Tech," then "OU Course Web," then "BIO 325." The class password is "elephant." Outlines, Study Guides, review sheets, last year's tests and helpful web-links are available at this class website.

The *text web site* is at: <http://chemistry.brookscole.com/ggb3/> Your own personal password accompanies each new text.

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LECTURE OUTLINE

BIO 325
Cowlisha
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Sp, 2005

Lec #	Day	Date	chpt	Topics
1	M	2-May	1	Intro to course and systems theory
2	T	3-May	2	Water
3	W	4-May	3	Thermodynamics
4	R	5-May	4	Amino acids
5	M	9-May	5	Proteins: 1° and fn
6	T	10-May	5	Proteins: 1° and fn
7	W	11-May	Test 1	chs 1-5
8	R	12-May	6	Proteins: 2°, 3°, 4°
9	M	16-May	6	Proteins: 2°, 3°, 4°
10	T	17-May	7	Carbohydrates
11	W	18-May	7,8	Lipids
12	R	19-May	10	Nucleotides & nucleic acids
13	M	23-May	Test 2	Chs 6-8,10
14	T	24-May	13	Enzymes: kinetics & specificity
15	W	25-May	13,14	Enzyme mechanisms
16	R	26-May	14,15	Enzyme regulation
(Recess)	M	30-May		
17	T	1-Jun	15	Enzyme regulation
18	W	2-Jun	17	Metabolism - an overview
19	R	3-Jun	18	Glycolysis
20	M	6-Jun	19	Krebs TCA
21	T	7-Jun	Test 3	Chs 13-15, 17-19
22	W	8-Jun	20	Electron transport
23	R	9-Jun	20,22	Ox Phos, Gluconeogenesis
24	M	13-Jun	22	Glycogen metabolism & PPPW
25	T	14-Jun	23,24	Lipid metabolism
26	W	15-Jun	25,26	Nitrogen metabolism
				Metabolic Integration & organ spec.
27	R	16-Jun	27	
	M, 8 am	20-Jun	Test 4	Chs 20, 22-27