Chemistry 431 A-01 **Biochemistry I** **# 10638**
Winter, 2010 **MWF 9:50 am -10:40 am** **SH C368**

Instructor: Dr. Gregorio Santillan

Office Hours: MWF 11 am-12 noon Tues 11 am – 1 pm

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Email address: gsantil@calstatela.edu. Feel free to email me your questions or comments. Please write on the subject field: "*Chem 431A – your name*".

Prerequisite: "C-" or better in the Organic Chemistry series: Chemistry 301a, 301b and 301c

Required Texts and materials: Lehninger Principles of Biochemistry, 5th edition (2008), by D. Nelson and M. Cox. (W. H. Freeman and Co.) A web site with additional materials is available at bcs.whfreeman.com/lehninger. This web site contains online quizzes, animations, "living graphs", and molecular structure tutorials. You are required to access this site and do all the quizzes according to the deadlines set by the instructor. You are also expected to access the department website: http://www.calstatela.edu/dept/chem/10winter/431a/. Class notes, exam guides, questions for discussion, and other materials may be posted here from time to time. It is recommended that you print out the pages before lecture and write in your notes during lecture.

Course objectives: This is the first quarter of a 3-quarter long series in biochemistry. The topics covered this quarter include: the role of aqueous interactions & energetics in living systems, the molecular characteristics of nucleic acids, protein structure & function, carbohydrates, and lipids in living cells.

Grades for the course will be based on a total of 500 points distributed as follows:

Midterm	60 points
Weekly quizzes (at 10 pts each x 10 weeks)	90 points
Final exam (cumulative)	100 points
	250 points

Letter grades will be assigned based on the following approximate scale:

90% and above = "A"
80% and above = "B"
65% and above = "C"
40% and above = "D"

The "+" or "-" grades will be used sparingly and only in borderline cases.

Policy on Exams: No make up quizzes are given. Absences are to be avoided at all costs. Emergencies must be documented and verifiable before they are considered to be valid excuses. Being unprepared for an exam is not considered an emergency. Anticipated problems should be discussed with the instructor before the exam not after. If you have a documented, excused absence in any one midterm exam, or quiz, that test will not be included in your total when calculating your average. If you are absent without a valid excuse, the score for that test will be a zero and will lower your grade by up two letter grades.

Weekly Quizzes: 10-point quizzes (10 minute) are usually given every two days of lecture meetings. Although short, these quizzes are worth 36% of your total grade. Actual dates for the quizzes are: Jan. 8(Fri), 13(Wed), 22(Fri), 27(Wed); Feb. 3(Wed), 12(Fri), 17(Wed), 26; Mar 3(Wed), 10 (Wed). Students are required to turn in a blue book by Friday, Jan. 8 or else obtain a –1 point deduction. This blue book will be used to take the subsequent quizzes. Normally the material for the quiz will include material discussed after the last quiz including the topic scheduled for the day of the quiz. All students are expected to solve all the sample problems and to be ahead of the lecture as far as your readings are concerned. Students will be required to remember the structures of all the amino acids (and their names and both 3-letter and 1-letter abbreviations) as well as the salient features of the structures of the naturally occurring mono- and dissacharides. Students are also expected to know the overall structure of fatty acids, phosphoglycerides, sphingomyosin, nucleotides and nucleic acids.

Textbook coverage: This quarter's reading assignment will include topics in chapters 1 –11 (but not including chapters 6 & 9) of the required textbook. You are expected to read these chapters ahead of the lecture. In addition, it is assumed that you will go over the problems in the back of the chapter with special emphasis on the assigned Sample Problems (see next page .

Other Policies: The university policy on accommodations for protected disabilities will be followed. University policies dealing with drops, incompletes as well as the penalties for cheating in exams will be adhered to.

Study skills. If you would like some suggestions on how to improve your study skills, try one of these web sites;

http://gwired.gwu.edu/counsel/asc/

http://www.ucc.vt.edu/stdysk/stdyhlp.html

Schedule: The tentative schedule for the lectures for this quarter is given below:

Week	**Main topic**	**Chapter**
1	Intro to Biochemistry/water/weak interactions	1 & 2
2	pH, buffers, bioenergetics,	2 &3
3*	Amino acids/proteins-	3
4	Structure of proteins	4
5	Protein function	5
6	Midterm Exam, Carbohydrates	7
7	Carbohydrates, Nucleotides	7 & 8
8	Nucleic Acids	8
9	Lipids & Membrane dynamics	8, 10 11
10	Membrane function	11
11	Final Exam (cumulative,)	

Although not graded, students are urged to do the online quizzes for all chapters assigned for that week. Questions from the online quiz may be included in that week's quiz.

- Jan. 18, 2010 , Monday – campus closed, Martin Luther King, Jr's Birthday
- Projected lecture and quiz schedule for Winter, 2010.

Week	Mon	Wed	Fri		
1	Jan 4 chapt 1.1-1.3	6 chapt 1.4-1.5	8 chapt 2.1-2.2 Q1		
2	11 chapt 2.3	13 chapt 3.1 Q2	15 Univ.Furlough		
3	18 MLK Holiday	20 chapt 3.2-3.3	22 chapt 3.4-3.5 Q3		
4	25 chapt 4.1- 4.2	27 ch 4.3 Q4	29 Dr Santillan Furlough		
5	feb 1 chapt 4.4	3 ch 5.1 Q5	5 Chapt 5.2 -5.3		
6 *	8 Test 1 (chps 1-5.3)	10 chapt 7.1	12 chapt 7.2 Q6		
7	15 chapt 7.3	17 ch 8.1 Q7	19 feb Univ.Furlough		
8	22 Dr Santillan Furlough	24 ch 8.2	26 chapt 8.3-8.4 Q8		
9	mar 1 chapt 10.1	3 chapt 10.2 Q 9	5 chapt 11.1-11.2		
10	8 chapt 11.3	10 survey review Q10	12 Dr Santillan Furlough		
11		431A Final Mar 17 8-1030 am			

- * note the test date on this week.