

# The University of Texas at San Antonio

## BIOCHEMISTRY

### BIO 3513.01T

**Instructor:** Pramod Kumar, Ph. D.

**Office:** SB 2.03.14

**Ph.** 458-5497

**Email:** [pramod.kumar@utsa.edu](mailto:pramod.kumar@utsa.edu)

**Office Hours:** After lecture

**Textbook:** Biochemistry by Berg, Tymoczko, and Stryer, 6<sup>th</sup> Ed.

**Prerequisite:** CHEM 2203 and CHEM 2242; BIO 2313 is also recommended

**Course Description:** This is a one semester introductory Biochemistry course. The course will include fundamental concepts emphasizing chemical principles and molecular function.

**Course Objectives:** To integrate key concepts describing the traditional core topics of Biochemistry: structure, metabolism and bioenergetics.

<b>Grading:</b>	<b>Exam</b>	<b>Weight</b>
	Exam 1:	25%
	Exam 2:	25%
	Quizzes/HW	10%
	Class Participation	5%
	Final Exam:	35%

Exam questions will be restricted to the material covered in lecture. Lecture notes will be available on WebCT after the lecture. Due to the rapid progression of the course, course notes are not guaranteed to be posted the same day as the lecture.

All exams will consist of matching/structure recognition, multiple choice, and short answer questions.

Make-up examinations are given only under extenuating circumstances. Students must take all 3 examinations. The makeup exam will be an essay exam and will be substantially different from the scheduled exam. Students will be responsible for retaining graded material once it is returned in order to reconstruct the grade book in the event of an emergency.

**ATTENDANCE**-Students are expected to attend all classes and will be held responsible for any information given in the class. If you cannot attend a lecture for any reason, you do not have to notify me.

**CLASSROOM BEHAVIOR EXPECTATION**-Students are expected to assist in maintaining a classroom environment that is conducive to learning. To assure all students have the opportunity to gain from time spent in class, students are prohibited from engaging in any form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

There will be no make-up exams and quizzes. Make-up examinations are given only under certain extenuating circumstances and are generally difficult than the regularly scheduled exams.

**Scholastic Dishonesty**-Cheating is a very serious academic offense and cannot be tolerated in any form. Information related to this issue can be found on the university website <http://www.utsa.edu/osja/scholastic.cfm> (Sec. 203. Scholastic Dishonesty)

Chapter	Topic	Sections	Assigned Problems
1	Biochemistry: An Evolving Science	1.3	6, 8, 10, and 11
2	Protein Composition and Structure	2.1, 2.2, 2.3, 2.4, 2.5, and 2.6	1a and 3
3	DNA, RNA, and the Flow of Genetic Information	4.1, 4.2, 4.3, 4.5 and 4.6	1, 4, 13
7	Hemoglobin: Portrait of a Protein in Action	7.1, 7.2, 7.3, and 7.4	3, 5, 6, 7, and 8
8	Enzymes: Basic Concepts and Kinetics	8.1, 8.2, 8.3, 8.4, and 8.5	1, 2, 4, 6, 11, and 12 (all parts)
9	Catalytic Strategies	9.1	2 and 4
10	Regulatory Strategies	10.1	1
11	Carbohydrates	11.1, 11.2, 11.3, & 11.4	3 and 5
12	Lipids and Cell Membranes	12.1, 12.2, 12.3, 12.4, 12.5, & 12.6	1, 2, 7, 8 and 9
15	Metabolism: Basic Concepts and Design	15.1, 15.2, & 15.3	1, 2, 3, 4, and 5
16	Glycolysis and Gluconeogenesis	16, 16.2, 16.3, & 16.4	1,2,5,8,9,10,11, 12 and 13
17	The Citric Acid Cycle	17.1, 17.2, 17.3, & 17.4	1, 3,5, 6, 7a
18	Oxidative Phosphorylation	18.1, 18.2, 18.3, 18.4, 18.5 & 18.6	1,2,3, and 5
20	The Calvin Cycle and Pentose Phosphate Pathway	20.3, 20.4, 20.5	9 and 11
21	Glycogen Metabolism	21.1, 21.2, 21.3, 21.4, & 21.5	2,3,4,5,9, and 10
22	Fatty Acid Metabolism	22.1, 22.2, 22.3, 22.4 & 22.5	3, 4, 5, and 11
23	Protein Turnover and Amino Acid Catabolism	23.3, 23.4, & 23.5	7,8,9 and 12
25	Nucleotide Biosynthesis	25.1,25.2,25.3,25.4, & 25.5	4,6,7,10,11,13,14, and 15

**Exam Schedule:**

**Exam 1**

Ch 1, 2, 3, 7, 8, 9, 10, 11

**Exam 2**

Ch 12, 15, 16, 17, 18, 20, 22

**Exam 3 (Final Exam)**

Comprehensive including ch 23, and 25 on August 14, 2007 (see Summer 2007

Final Exam Schedule for time on Web)