BIOS 452/CHEM 452

BIOCHEMISTRY I
Fall, 2010

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Text: Principles of Biochemistry (Fifth Edition) by Nelson/Cox
(ISBN 0-7167-4339-6)

Course Materials on Web: www.chem.uic.edu/chem452

LECTURE, QUIZ, AND EXAMINATION SCHEDULE:

WEEK	TOPIC	CHAPTER
1	Living Organisms and Molecules/Cell Structure Function and Composition	1
	Nucleic Acids: Nucleotides	8
2,3,4	Nucleic Acids: Primary, Secondary and Tertiary Structure **(QUIZ – Week 3)** (LAST DAY TO DROP: FRIDAY, September 3)	8,9,24
5,6	Proteins: Amino Acid Structure and Properties **(EXAMINATION – *Friday, September 24*)**	2,3
7	Proteins: Composition and Primary Structure **(QUIZ – Week 7)**	4
8,9	Proteins: Secondary Structure **(QUIZ – Week 9)**	4
10,11	Proteins: Tertiary and Quaternary Structure **(EXAMINATION – *Wednesday, November 3*)**	4
	Protein Structure and Function	5
12	Carbohydrates and Glycoconjugates	7
	Lipids and Membranes **(QUIZ – Week 12)**	10
13	Enzymes: Classification and Kinetics	6
14	Enzymes: Mechanism **(EXAMINATION – *Monday, November 22*)**	6
15	Enzymes: Regulation	6
16	**FINAL EXAMINATION – *Tuesday, December 7*** *8:00-10:00 a.m.*	

QUIZZES, EXAMINATIONS, AND FINAL GRADES

Four quizzes are scheduled during the Semester. Each quiz will last approximately 15-20 minutes and have a 25-point value. Quizzes must be taken during your assigned discussion section. Three hour-examinations are scheduled during the semester. Each hour examination will have a 100-point value. There will also be a final examination, which will have a 200-point value. Final grades will then be determined from the total number of points (600) obtained from quiz, hour, and final examination grades. ***No make-up quizzes or hour examinations will be given.*** If you do not take or turn in one hour exam, a grade will be assigned for the exam based on your performance on other examinations and the average class grades for the examinations according to the following formula:

$$\text{Missing Exam Grade} = \frac{\text{Sum of other Hour and Final Exam Grades}}{\text{Sum of Class Averages on Other Exams}} \times \text{Class Average on Missing Exam}$$

If you miss two hour exams or the final exam with an excused absence, you will be given an Incomplete. If you do not take or turn in one quiz, a grade will be assigned for it as for one missed hour examination, thereafter a zero will be recorded. ***Quizzes and exams that are turned in will not subsequently be dropped because of a low grade***.

The total points earned from quizzes are normalized to account for variations between sections according to the following formula:

$$\text{Normalized Quiz Total*} = \frac{\text{Class Average Quiz Total}}{\text{Section Average Quiz Total}} \times \text{Quiz Total}$$

*Maximum Quiz Points = 100

Students with disabilities need to inform me of their need for accommodations. Students with disabilities who require accommodations for access and participation in this course must also be registered with the Office of Disability Services (ODS). Please contact ODS at 312/413-2183 (voice) or 312/413-0123 (TTY).

Biochemistry I

Basic Mathematical Problems

1. Express in scientific notation 0.0254.

2. Indicate the number of significant figures in each of the following numbers.

   1.30
   0.206
   0.012
   36.501

3. Evaluate:

   $81^{3/4}$

   10^{0}

4. Evaluate:

   log 15
   log 0.327
   log 1

5. Indicate whether the lines described by each of the following equations are straight or curved. If straight, compute the slope. Verify your answers by plotting on suitable graph paper.

   $3y - 12x = 8$

   $y^2 = 16x$

6. Solve the following equation for z:

   $z^2 + 3z + 1 = 0$

7. Solve for n: log n = 0.7781

8. Verify: ln x = 2.303 log x, where e = 2.7183

9. The pH = 6.6. What is the $[H^+]$?

10. The $[H^+] = 3.4 \times 10^{-5}$ M. What is the pH?