Fall 2015

BIOS 5103

Zhengchang Liu
University of New Orleans

BIOCHEMISTRY I BIOS5103/CHEM5510 SEMESTER: Fall 2015

Instructor: Zhengchang Liu, Ph.D.
Class Meeting Times: Tu Th 9:30-10:45AM

Class Meeting Location: BIO 101

Office Hours: Monday: 10AM-12PM; Tu Th 11AM-1PM
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COURSE MATERIALS: The textbook is ***FUNDAMENTALS OF BIOCHEMISTRY***, by Voet, Voet and Pratt, 4th Ed. Wily Plus access is recommended when you buy a new textbook. Wily Plus provides exercises,

ISBN: 9780470547847 Hardcover
ISBN: 9781118129180 Loose Leaf

Student Companion to Fundamentals of Biochemistry (ISBN-13: 978-1118218273) is optional.

i>Clicker is required for in-class quizzes and for recording attendance.
The REGISTRATION process at iClicker links your clicker ID to your name (and ultimately to our grading spreadsheet). You need to do this to get credit for class participation and in-class quizzes. This process appears simple enough. For people who have more than one clicker classes: you only need to do this once. The instructor software takes care of the rest.

1. Go to the iClicker registration website (http://www1.iclicker.com/register-clicker).
2. Fill in the form.
3. Press "Register" and you're done. This puts you and your clicker into their database.

COURSE PREREQUISITES: BIOS2114 (sophomore-level or above Cell and Molecular Biology), CHEM2217 (Organic chemistry I), CHEM3218 (Organic Chemistry II).

INTERNET: All students are expected to have access to the internet (UNO provides internet access to all registered students on campus). The instructor will utilize Moodle, accessible through the UNO website. In addition, a number of class activities may utilize the website that accompanies the textbook.

COURSE OVERVIEW AND LEARNING OUTCOMES: This course provides an in-depth examination of many fundamental concepts in biochemistry. The central theme is the structure and function of biomolecules, with particular emphasis on proteins. Students will be expected to:

1. Apply basic chemical and thermodynamic principles to biomolecules.
2. Know the structure of specific biomolecules including all 20 common amino acids, glucose, ribose, representative lipids, nucleotides, and etc.
3. Understand the principles governing protein structure and function, including enzyme catalysis and kinetics.
4. Learn properties and a brief survey of metabolism of biologically relevant carbohydrates, lipids, amino acids and nucleic acids.
5. **Apply knowledge learned herein, conduct an in-depth analysis of a biochemical topic, present and defend an oral presentation.**

GRADING: Students will be evaluated through three 75-min tests, the final exam and in-class quizzes. The grade distribution is as follows:

	Graduate
Test I-III	3 x 100 points
Final exam	100 (Test IV) + 50 points (Comprehensive)
In-class quizzes	50 points
Presentation	100 points
Course Total	600

Letter grades will be assigned based primarily on test grades (10 percentile scale) and secondarily on class ranking. Extra-credit exercises may be assigned.

PRESENTATION: Students are required to give a 25+ min talk based on the primary literature of a chosen subject area submitted to and approved by the instructor. The due date of submitting a topic is **November 3rd**. The presentation date and time: TBA.

ATTENDANCE: Regular attendance is required. iClicker is used to monitor class attendance. A missed test will count as zero unless the missed test is due to an *excused* absence, which requires documentation. Tests missed due to excused absences will be made up in consultation with the professor. The student is responsible for making such arrangements to take a makeup test ***within one week before or two days after a scheduled test***.

STUDENT CONDUCT: Students are expected to follow all rules and regulations set in the Student Code of Conduct (http://www.uno.edu/greek-life/documents/UNO_Student_Code_of_Conduct.pdf).

ACADEMIC INTEGRITY: Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at http://www.studentaffairs.uno.edu

DIGITAL MEDIA: Access to any form of digital media is strictly forbidden during a test.

DROP DATES: The final date to drop the course and not have it recorded is **September 8**. The final date for dropping the course is **October 14**.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES: It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to http://www.ods.uno.edu.

COURSE SCHEDULE (Tentative)

Material/Schedule	**Dates**	**Other**
Chapter 1, Life	Aug 20, 25	
Chapter 2, Water	Aug 27, Sep 1	
Chapter 4, Amino Acids	Sep 3, 8	
Chapter 5, Proteins: Primary Structure	Sep 10, 15	
Chapter 6, Proteins: 3D Structure	Sep 17, 24, 29	
TEST 1	**Sep 22**	**Chapters 1, 2, 4, 5**
Chapter 7, Protein Function	Oct 1, 6	
Chapter 8, Carbohydrates	Oct 8, 13	
TEST 2	**Oct 20**	**Chapters 6, 7, 8**
Chapter **3**. Nucleotides and nucleic acids and Chapter **24**, Sections 1 and 2.	Oct 22, 27	
Chapter 9, Lipids and biological membranes	Oct 29, Nov 3	
Chapter 10, Membrane transport	Nov 5, 10	
Chapter 11, Enzyme Catalysis	Nov 12, 19	
TEST 3	**Nov 17**	**Chapters 3, 9, 10, 24**
Chapter 12, Enzyme Kinetics & review	Nov 24, Dec 1, 3	
FINAL EXAM	**Dec 10 (10AM-12PM)**	**Chapters 11, 12 and Comprehensive**

FINAL NOTES: Here are a few helpful hints for succeeding in this course and others:

1. Read the textbook chapters before they are covered in class.
2. Reread the chapters after lecture, focusing on material emphasized in lectures.
3. Do exercises and problems at the end of each chapter.
4. Use the CD and other instructional media online.
5. See the instructor outside class time if uncertain of material.
6. Arrive on time and remain for the full class session.
7. Do not wait until the last week to prepare for your test.