Biochemistry I
CHEM 4320
Syllabus
Spring 2019

Instructor
Dr. Melissa Kelley
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Office Hours
Monday: 1:00-2:00
Wednesday: 8:15-9:15
Friday: 8:15-9:15
Appointments are also available.

Class Meeting Time
TR 9:25-10:40 Laney 104

Text
Biochemistry 7th Edition, J.M. Berg, J.L. Tymoczko, and L. Stryer (2012)

Course Description and Objectives
Biochemistry I is an intensive study of biomolecules and their properties including their structure, function, and metabolism. The objective of this course is for students to have an in-depth understanding of biomolecules including proteins, carbohydrates, nucleic acids, and lipids and their associated metabolism including bioenergetics and synthesis.

Course Prerequisites
Prerequisite Grade of C or better in CHEM 3411 and BIOL 1440. This course will require students to understand basic concepts from general chemistry and organic chemistry. These topics include but are not limited to: acid/base chemistry, shapes of molecules, organic functional groups and their reactions, oxidation/reduction reactions, thermodynamics, and equilibrium.

How to be successful in this course

1. **Attend lecture.** Students who do not attend lecture will not be successful in this course. Many of the topics I cover will not be presented in the book. You are responsible for the material covered in class and the reading assignments. Attending class is highly recommended.
2. **Study time.** I recommend you devote between two and three hours per lecture study time. I recommend you identify two or three other classmates to study with, asking questions, and using the textbook as a guide.
3. **Biochemistry is a field that requires you to practice and think.** Biochemistry follows the same scientific laws that you have already learned and it is the

application of these scientific laws to biological systems. Biochemistry is not a spectator sport and to be successful it requires hard work and lots of practice.

4. **Ask questions.** If you do not understand the concepts, I have presented in lecture ask. Biochemistry is a science in which one concept is built on another. Please do not be embarrassed, there is no such thing as a stupid question. Stupidity lies in not asking. Please feel free to stop me in lecture with a question or if you would prefer stop by my office during office hours and ask.
5. **Be an interactive learner.** Ask questions and participate in class discussions. This is an excellent way to understand the material and hopefully you find many of the topics we cover are applicable to your life and your future career.

Important Notes:

1. I cannot discuss grades by phone or email. I will not calculate your grade in the course for you.
2. I will not re-grade your assignments for additional partial credit. If I have made a mathematical calculation error, then the error can be discussed. You have one week to contact me about a mathematical error on your assignments, after that time period the grade stands.
3. Late work is never accepted.
4. If you miss class, I will not provide a make-up lecture for you on the material. It is your responsibility to obtain the material. I would recommend that you try to have someone record the lecture for you, and get a least two people's notes over the material. After you have done these things, please come to me if you have specific questions about the material you missed.
5. I do not provide extra credit. There are plenty of opportunities for credit during the semester.
6. You must submit assignments in the manner requested and follow the directions concerning quizzes, exams, and assignments. Failure to follow the directions may result in a significant loss in points.
7. I will not answer questions regarding material on the exam or quiz prior to class starting. If you have specific questions about exam material, do not wait until the last minute or the day before to ask questions or email me. I will not answer exam related questions the day before an exam.

What do I expect you to know and understand?

Everything we talk about in class. **To earn an A, memorization is not enough.** Test questions will require you to apply the principles we have discussed in class and are problems which you have not encountered before. I care that you understand structures and pathways.

Grading

Points Available
3 Exams @ 100 points each= 300 points Case study assessment= 120 points Quizzes = 180 points Misc. assignments= 0-100 points Total points= 600-700 points

Grading Scale

A: 90%
B: 80%
C: 70%
D: 60%
F: 50%

Case Study Assessment (CSA)

You will have an opportunity to answer case study questions based on glycolytic enzyme that is assigned to you by the instructor. Each student will be assessed on the biochemical knowledge with regard to biomolecule metabolism and associated blood chemistry.

Quizzes

The lowest quiz score will be dropped.

Missed Exams

A missed exam will be made up at my discretion. If you miss an exam for a **valid and significant reason**, and you contact me either through email **significantly before** the schedule exam, then we can discuss the possibilities of a make-up exam. If you contact me after the exam, no make-up will be given. I strongly suggest that you make every effort to attend exams. Tardiness to an exam is unacceptable and highly discouraged.

Miscellaneous Assignments

There will be an opportunity to complete miscellaneous assignments during the course of the semester. The assignments will be listed either on the course website or through Google classroom.

Lecture Schedule with Appropriate Book Chapters

***This is a tentative schedule-all dates and contents are subject to change**

Date	Topic	Chapter	Assignments
Jan 10	Introduction		
Jan 15	Introduction	1	
Jan 17	Introduction		**Quiz #1**
Jan 22	Protein Structure and	2	
Jan 24	Function	3	**Quiz #2**
Jan 29	Exploring Proteins	3	
Jan 31	Enzymes Basic Concepts & Design	8	**Quiz #3**
Feb 5	Enzymes Basic Concepts & Design		
Feb 7	**EXAM 1**		**EXAM 1**
Feb 12	Catalytic Strategies and	7,9, & 10	
Feb 14	Regulatory Strategies		**Quiz #4**
Feb 19	Carbohydrates	11 15	
Feb 21	Metabolism: Basic Concepts and Design		**Quiz #5**
Feb 26	Metabolism: Basic Concepts and Design	15	
Feb 28	Glycolysis and Gluconeogenesis	16	**Quiz #6**
Mar 5	Glycolysis and Gluconeogenesis		
Mar	Glycolysis and Gluconeogenesis "		**Quiz #7**
Mar 12	Glycogen Metabolism and Pentose Phosphate Pathway	21	
Mar 14	**EXAM 2**		**EXAM 2**
Mar 18-22	**Spring Break!**		

Mar 26 Mar 28	Pentose Phosphate Pathway Citric Acid Cycle Oxidative Phosphorylation	20 17 18	 **Quiz #8** **Last Day to Drop Mar 29th**
Apr 2 Apr 4	Lipids and Cell Membranes Fatty Acid Metabolism	12 22	 **Quiz #9**
Apr 9 Apr 11	Fatty Acid Metabolism "	22	 **Quiz #10**
Apr 16 Apr 18	Amino Acid Metabolism **EXAM 3**	23 & 24	 **EXAM 3**
Apr 23 Apr 25	Integration of Metabolism **Case Study Assessment**	27	 **CSA**

University Academic Policies

Academic Integrity

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Disabilities Statement

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Disability Resource Center, 450-3613.

Building Emergency Plan

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at http://uca.edu/mysafety/bep/. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX Disclosure

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs, and the obligation to conduct an investigation will depend on the specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: https://uca.edu/titleix. *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Course Evaluations

Evaluations are kept completely confidential. Your thoughtful feedback is highly valued and cannot negatively or positively affect your course grade. Over the years this information has changed and improved the instruction of this course.

Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may evaluate courses they are taking starting on the Monday of the thirteenth week of instruction through the end of finals week by logging in to myUCA and clicking on the Evals button in the top right.

Student Handbook Policies

You are encouraged to familiarize yourself with student policies described in the student handbook. In particular, carefully read and understand those policies pertaining to academic issues and sexual harrassment.