

The main goal of this course is to understand the relevance of chemical principles within biological systems. Students actively engaged in this course should be able to:

Integrate the essential chemical characteristics of major types of biochemical molecules with their biological relevance.

Mastery of chemical and biochemical principles is developed through *practice*. Opportunities for you to interact with course content is available online through Achieve Essentials. These problems will include _____ and practice/review problems or activities. While only scores on assigned homework will count towards the course grade, you are encouraged to use a variety of resources that are helpful for your learning. You will have unlimited attempts to complete the homework, however there will be a small (1%) penalty for each attempt and a late penalty for homework submitted after the deadline. Homework deadlines will be _____ the day they are due, frequently on Sunday with occasional mid-week assignments as needed.

In addition to online homework, we will also have a variety of assigned "Learning Activities," in-class iClicker questions, or quizzes designed to help you practice and gain mastery of course material. These will be assigned in-class, included on Road Maps, and posted on D2L. We will also have frequent short class surveys including post-exam surveys, metacognitive reflection questions, etc. which will help you reflect on your learning this semester.

During the second half of the semester you will work on an individual enzyme project that will apply your growing knowledge of enzyme function, structure, and kinetics to a unique enzyme, gain experience searching and reading scientific literature, and be inspired by enzymes. This project will be scaffolded through several assignments including

- (1) Choosing an enzyme and accompanying structure-based journal article
- (2) Completing a series of assignments related to your enzyme and its structure, function, mechanism, and kinetics.
- (3) Create art (broadly defined) inspired by your enzyme.

Title IX Statement

Millersville University and its faculty are committed to maintaining a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, Title IX requires University faculty members to report incidents of sexual discrimination, including sexual violence, shared by students to the University's Title IX Coordinator. Accordingly, if a student shares information about any incidents of

or in other contexts, faculty must report that information to the Title IX Coordinator. This information will only be shared with the Title IX Coordinator, who is the individual on campus designated to respond to

1/22	Introduction to Biochemistry and Respiration	No Lab
1/24	Water; Molecular Forces of Attraction	
1/27	Acid-Base Chemistry	Solns, Dilns, and Spec
1/29	Acid-Base Chemistry; Nucleotides	
1/31	Nucleic Acid Structure	
2/3	Nucleic Acids Function; Central Dogma	Buffers: pH & pKa
2/5	Carbohydrates	
2/7	Carbohydrates	
2/10 2/12	Glycobiology	Carbohydrates and RNA Folding