BCHM 88b: Introductory Biochemistry

Fall 2018 Syllabus

Instructor: Emily Westover, westover@brandeis, ext. 6-2304
Kosow 108; Open Office Hours: M 1-2:30; H 12-1 or by email appointment

Assistants: Michelle Langton (mlangton@brandeis) & Tina Quasney (cquas@brandeis)

Meetings:
Lecture 11:00 – 11:50 am, MWH, G’zang 124
Recitation 6:30 – 7:50 pm, H, TBD

Textbook: Essential Biochemistry by Pratt, 3rd or 4th Ed.

Learning Goals
This course will introduce non-biochemistry majors to a variety of biochemistry topics, drawing on principles of general and organic chemistry as well as cell biology to understand living systems at a molecular level. In your studies this semester, you will:

● Acquire and effectively use the language of biochemistry.
● Characterize the chemical and biological principles involved in biochemical interactions and reactions.
● Evaluate the relationship between molecular structure and function.
● Analyze the regulated outcomes of biochemical pathways.

You will show your learning in a variety of ways:

Weekly Quiz 60 points, 15%
You will show your understanding of biochemistry terms and skills through quizzes given each non-exam week. Quizzes will be given during Recitation, beginning promptly at 7:30 pm and will assess your understanding and application of topics. I will only use your 6 best quiz scores in determining your final grade...because we all periodically have a bad day and we all have a life outside BCHM88.

Disease Project 24 points, 6%
You and a partner will prepare a mini-poster and short presentation explaining the biological basis of a disease caused by a single protein/enzyme defect. You will share your poster on the class "Disease Day."

Metabolic Map 16 points, 4%
You and a few classmates (total 3-4 students) will prepare a metabolic map for a single metabolite. Your concept map should include the major pathways to produce the metabolite and the major catabolic products of your chosen metabolite. You will help evaluate metabolic maps made by your peers.

Exams 300 points, 75%
You will show your biochemical understanding on four 100-point exams during this course; I will consider your best three exam scores in calculating your final grade. All exams will be comprehensive and require both understanding and applying biochemical knowledge. Exams will be given on Thursdays October 4, November 1, and December 6 during the recitation period (6:30-7:50 pm). Make-up exams will only be given for University-sanctioned events. The final exam is tentatively scheduled for Wednesday, December 19, 9:15 am - 12:15 pm. *Do not make travel arrangements that interfere with this exam.*
Expectations

As per University policy, success in this 4 credit hour course is based on the expectation that you will spend a minimum of 9 hours of study time per week in preparation for class (e.g., readings, assignments, projects, and exam preparation) in addition to class attendance.

I expect you to faithfully follow the University’s Academic Integrity policies. You should do your own work unless explicitly stated in course assignments.

I ask you to stay apprised of all information given in class and via LATTE. Please regularly check the class schedule/reading assignments on LATTE.

During class, I expect you to only use electronic devices to participate in class activities.

To be fair to all students, I do not give make-up exams or assignments. I want you to learn biochemistry well; to this end, all assessments will be comprehensive.

If you need a University-sanctioned accommodation, please contact me immediately.

I will assign letter grades based on percentage of total points earned using a traditional scale: A: >93%, A-: 93-90, B+: 89-87, etc. No extra credit will be given. Any regrade requests must be typed and submitted with a hard copy of the original assignment within one week of original return date.

10 things I hope you’ll take away from BCHM 88...

1. Biochemistry is the study of life’s molecular details.
2. Biological processes—normal and abnormal—can be understood at a biochemical level...although we don’t understand it all.
3. Water’s chemical properties underlie life as we know it.
4. The four biomolecular classes (proteins, carbohydrates, lipids and nucleotides) have unique properties and biological roles.
5. Molecular structure/form determines function.
6. Covalent bonds constrain biomolecules; non-covalent weak interactions dictate biochemical structure and associations.
7. The laws and principles of general and organic chemistry apply to biological systems.
8. Chemical energy drives biological processes.
9. Biochemical processes are highly regulated.
10. Studying biochemistry will help you develop these transferable skills:
   a. Integrating a large body of information,
   b. Solving complex, data-based problems,
   c. Interpreting and analyzing data,
   d. Understanding, applying, and developing conceptual and theoretical models,
   e. Communicating effectively.