

General Biochemistry I Syllabus
Fall 2019
Chem463/563, Biol483/583
4 Credits

Instructor: Lee Solomon

Office Hours: 10:30 am-11:30 pm Monday, Wednesday or by appointment

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Materials:

- 1) Textbook- Lehninger's Biochemistry, 7th Edition (or really any edition will work)

Prerequisites: Completion of BIOL 213 and CHEM 313 with a C or better

Course Description: This is the first semester of a two-semester general biochemistry sequence that will introduce the student to the rapidly changing subject area of biochemistry. We will begin with a brief introduction to biochemistry, followed by an in-depth look at the structure, function, kinetics, and regulation of enzymes. After developing an appreciation for these molecular machines, we will begin to explore complex cellular metabolic processes. We will then later discuss the biochemical basis of cellular signaling and transport.

Course Goals:

1. Introduce the student to the language of biochemistry.
2. Illustrate how the chemical principles learned in general and organic chemistry apply to biological situations, thus marrying together chemistry and biology.
3. Bring each student to a general understanding of and appreciation for the major biomolecules.
4. Have an understanding of the major metabolic pathways and their regulation and interaction.
5. Develop an awareness of how biochemical principles apply to various cross-disciplinary areas of research.

Biochemistry is a broad and complicated subject with a unique language, which adds to the difficulty. You should be forewarned that it takes time and dedication to earn a good grade in this class. You should not expect to pass simply by showing up every day, and you should not expect to pass the class if you do not show up every day. It is important that each student commit to spending significant hours outside of lecture reviewing the material and working through problems. **If you are unable to make this commitment you are unlikely to perform well in the class and may want to consider taking it at another time.**

Grading and Examination Policy: There will be four in-class exams. The exams will cover the material discussed in lecture as well as the assigned reading. Each exam will

be worth 100 points. I reserve the right to ask questions on material assigned in the reading but not covered in lecture.

Quizzes or in-class problems may be given. They will not always be announced in advanced. Make-up quizzes will not be given and a grade of "0" will be assigned if a quiz is missed.

<u>Grading (463/483)</u>	
Exam 1	25%
Exam 2	25%
Exam 3	25%
<u>Exam 4</u>	<u>25%</u>
Total	100%

Plus and minus grades are assigned (A+, A, A-), however, an absolute grading scale will not be determined until all scores have been compiled and evaluated. As a general rule, the following scale will be followed: 97-100= A+, 93-96.5=A, 90-92.5=A-, 87-89.5=B+, 83-86.5=B, 80-82.5=B-, 77-80=C+, 73-76.5=C, 70-72.5=C-, 60-69=D, below 60=F

The final exam will be the national ACS exam covering the entirety of CHEM 463/563

Students in CHEM 563/BIOL 583: You will be responsible for writing four paper summaries over the course of the semester. You will turn in one summary on each exam date. A grading rubric and the paper you are responsible for reporting on will be posted on Blackboard. Your overall grading scheme will differ from 463/483. Each exam will account for 17% of your overall grade and each paper summary will count for 5%.

Kahoots: We will be using **kahoot.com** an online quizzing program. These quizzes are meant to engage you in class and provide feedback to me for instruction. These quizzes are not reflected in your final grades. If you do not have a phone/computer and are unable to participate directly let me know if you want to make other arrangements to participate.

Snow days: In the event of University wide class cancellation, we will follow instructions from the administration for make-up days. If the cancellation falls on an exam date, the exam will be given at the next scheduled meeting.

Honor Code: GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. Academic integrity is taken very seriously and violations are treated gravely. You may not have any electronic devices other than a non-graphing calculator (if necessary) during exams and you also may also not change or check your exam after leaving the room. **No grade is important enough to justify academic misconduct!!!!**

Email: Students must use their MasonLive email account to receive important University information, including messages related to this class. See <http://masonlive.gmu.edu> for more information.

Blackboard: Grades will also be posted to Blackboard in Grade Center. Please make sure your grades are up to date and accurate. Notify me immediately if you notice any discrepancy or missing grades.

Electronic Device Etiquette: Electronic devices (laptops, tablets, phones, etc.) should only be used for Kahoot access and note taking. **Browsing the internet, gaming, checking email, and doing work for other classes is not allowed.** I reserve the right to ask you to leave if you do not comply with this policy. If you choose to voice record lecture, you may do so, but you do not have permission to distribute or share your recordings. They are for personal use only.

Students with Disabilities: Students with physical or learning disabilities should contact the Office of Disability Services for specific information and assistance regarding their needs. **If you have a documented disability that requires accommodation, you must meet with me in the first week of class to discuss your accommodations and their implementation.** Chemistry faculty and staff work cooperatively to assist students with disabilities with their educational objectives.

Title IX Notice of mandatory reporting of sexual assault interpersonal violence and stalking: As a faculty member and designated “Responsible Employee” I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason’s Title IX coordinator per university policy 1412. If you wish to speak with someone confidentially, please contact the **Student Support and Advocacy Center (703-993-2380).** You may also seek assistance from Mason’s **Title IX coordinator (703-993-8730; titleix@gmu.edu).**

General Biochemistry I

Syllabus for Fall 2018

Text: Lehninger Principles of Biochemistry, 7th Ed.

Date	Topic	Reading Chapters
26-Aug	Biochemistry Introduction	1.1-1.4, 13.2
28-Aug	Water and Buffers, Amino Acids	2.1-2.5
2-Sept	Labor Day – No class	
4-Sept	Amino Acids, Peptides, and Proteins	3.1 & 3.2
9-Sept	Protein Structure	4.1-4.3
11-Sept	Protein Function	5.1
16-Sept	Cofactors	
18-Sept	Enzyme Kinetics	6
23-Sept	Exam 1	
25-Sept	Carbohydrates	7
30-Sept	Nucleotides and Nucleic Acids	8
2-Oct	Lipids	10
7-Oct	Membranes	11.1-11.2
9-Oct	Transport	11.3
14-Oct	Biosignaling	12
16-Oct	No Class	
21-Oct	Bioenergetics, Intro to Metabolism	13
23-Oct	Exam 2	
28-Oct	Glycolysis	14.1
30-Oct	Citric Acid Cycle	16
4-Nov	Oxidative Phosphorylation	19
6-Nov	Regulation	15
11-Nov	Gluconeogenesis	14.4
13-Nov	Exam 3	
18-Nov	Fatty Acid Oxidation	17
20-Nov	Lipid Biosynthesis	21
25-Nov	Thanksgiving Break- No Class	
2-Dec	Amino Acid Degradation	18
4-Dec	*Exam 4- Final Exam	

*This schedule is tentative and subject to change, however, exam 1-3 dates are final.

Exam 4 will be the last day of class.

Topics for Exam 1 are colored in Green

Topics for Exam 1 are colored in Cyan

Topics for Exam 1 are colored in Yellow

Exam 4 is cumulative and will cover all topics in the class