

Biochemistry I- CHMB.402
Spring Semester 2022-2023
T/Th 9:30 AM – 10:45 PM

Dr. Lea Vacca Michel	lvmsch@rit.edu (email) GOS-3284 (office) GOS-3167 (lab)
Office Hours	Wednesdays 8:30-10 AM or by appointment (email to schedule)
Class Location	GOS-A300
Text (<i>recommended</i>)	Lehninger Principles of Biochemistry, 7 th Edition by Nelson and Cox
Software/Technology/ Media	Access to reliable/consistent internet; Microsoft Word or equivalent; Zoom; Video viewer; myCourses

Objective: This course will deal with the structure and function of proteins, carbohydrates, lipids, and nucleotides.

Pre-requisites: Organic Chemistry 1. It will be assumed that students in this course will have strong familiarity with organic chemical structures, nomenclature, and reactivity. Also, students will need to be familiar with acid-base chemistry, equilibrium, and basic thermodynamics.

Attendance: Students will be **expected to attend all classes in-person**. In case of a documented emergency or illness, please email me ASAP. You **MUST** get permission to Zoom into class. Students will be expected to make-up all missed work using virtual/online resources and notes.

Learning Assistant: Martina Videva (mv7933@g.rit.edu) and Nico Burgado (njb9369@g.rit.edu) will be our Learning Assistants (LAs) for the semester. We are lucky to have their expertise and experience in biochemistry- their role is to help you actively learn best! Martina and Nico will be attending classes and working with you to deepen your engagement with the material. Martina and Nico will also hold sessions outside of class, called LA sessions, which will provide you additional time to get help with class material, learn effective study habits specific to this class, and work with others to study and complete homework and other assignments.

Assignments (10 points each). There will be 5 short assignments (50 points total) to be completed along with some of the virtual lectures. They will be due at 11:59 PM on their due date (see schedule below).

Late Work: Points will be deducted on all work submitted late (10% per day); if there was an ***extenuating*** circumstance that prevented you from completing/submitting your assignment on time, please let me know via email as soon as possible.

Exams: 4 exams (100 points each). There will be four in-class exams throughout the semester. Make-up exams may be allowed in cases of genuine, **documented** emergencies (I must be contacted ***immediately*** with your request for a make-up exam).

Final Project: There will be a final project worth 50 points (more info to come). **YOU WILL BE EXPECTED TO BE PRESENT** (in person) **FOR THE FINAL EXAM SESSION** (held during the final exam time slot- info on SIS). Please make all travel plans accordingly.

FINAL GRADE SCHEME- TOTAL POINTS: 500

A: 93-100%	B+: 87-89.9%	C+: 77-79.9%	D: 60-69.9%	F: <60%
A-: 90-92.9%	B: 83-86.9%	C: 73-76.9%		
	B-: 80-82.9%	C-: 70-72.9%		

A note from the instructor: My goal for you is to learn and love (ok...I'll settle for like) biochemistry! I understand that people may *experience hardship* during the semester- please notify me if this happens to you, and we can figure out a plan together. Also, it is important to me that I use the correct pronoun when addressing you- please feel free to let me know (either in public or private). I will do my very best to get it right! (My pronouns: she/her/hers)

Diversity, Inclusion, and Respect

RIT has put forth [Policy P05.0 Diversity Statement](#) for all community member. I am committed to creating an inclusive class environment where all students feel welcome and respected, with the ability to speak their mind and fully participate in all aspects of our class. If you feel that this commitment has been violated (against you or one of your peers), please let me know ASAP.

Expectations:

- I will be posting all assignments, figures, notes, etc. on myCourses; assignments will be turned in through myCourses.
- To assist others in identifying you when using myCourses, please upload an appropriate profile picture to your myCourses account.
- Make sure to put your **preferred** name on all your exams, assignments, and on Zoom.
- Exams will be taken in-person; **you are prohibited** from sharing any information on the exam with anyone else (in class or outside of our class).
- Please read all of my emails, as they will contain important information.
- Please use proper email etiquette when emailing me, your other professors, and your peers.
- I will do my best to post grades on all assignments and exams within **2 weeks** of their submission, in accordance to university policy.
- I will typically respond to your email within 24 hours of receipt- please email me again if you do not hear from me within that time frame. Over the weekend, I may not provide an immediate response, but will do so by Monday.

Tentative Course Schedule (Subject to change):

January							February							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	
1	2	3	4	5	6	7	29	30	31	1	2	3	4	Week 3
8	9	10	11	12	13	14	5	6	7	8	9	10	11	Week 4
Week 1	15	16	17	18	19	20	12	13	14	15	16	17	18	Week 5
Week 2	22	23	24	25	26	27	19	20	21	22	23	24	25	Week 6
Week 3	29	30	31	1	2	3	26	27	28	1	2	3	4	Week 7
March							April							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	
Week 7	26	27	28	1	2	3	26	27	28	29	30	31	1	Week 11
Week 8	5	6	7	8	9	10	2	3	4	5	6	7	8	
Spring Break	12	13	14	15	16	17	9	10	11	12	13	14	15	Week 12
Week 9	19	20	21	22	23	24	16	17	18	19	20	21	22	Week 13
Week 10	26	27	28	29	30	31	23	24	25	26	27	28	29	Week 14

Week	Chapters	Topics
1- T	1	Syllabus, Biochemistry Introduction, Review
1- Th	2	Water, pH, pK _a
Due 1/23	Assignment 1	Review- MW, Thermodynamics, etc.
2- T	3	Amino Acids
2- Th	3	pI, pK _a , Titration Curves, Intro- Proteins
3- T	4	Protein Structure and Stability, Secondary Structures
3- Th	4	Working with Proteins
Due 2/3	Assignment 2	AA, pK _a , and Working with Proteins
4- T (2/7)	1-4	Exam 1
4- Th	6	Enzymes- Introduction
5- T	6	Michaelis-Menten, Lineweaver-Burk
5- Th	6	Michaelis-Menten, Lineweaver-Burk, Inhibition
6- T	6	Chymotrypsin Mechanism
Due 2/22	Assignment 3	M-M/LWB Practice Problems
6- Th	6	M-M and LWB Problems- Review
7- T (2/28)	6	Exam 2
7- Th	13-14	Intro to Metabolism, Glycolysis- VIDEO LECTURE
8- T	13-14	Glycolysis
8- Th	13-14	Glycolysis
9- T	16.1	PDH Complex
9- Th	16	Citric Acid Cycle
Due 3/26	Assignment 4	Metabolism
10- T	--	Metabolism Review
10- Th (3/30)	13-14, 16	Exam 3

11- T	19	Oxidative Phosphorylation
11- Th	19	ATP Synthesis
12- T	17, 21	Fatty Acid Metabolism
12- Th	8, 24	Nucleic Acid Structure, Nucleosomes, Chromatin
13- T	25-27	DNA replication, Transcription, Translation
13- Th	25-27	DNA replication, Transcription, Translation
Due 4/23	Assignment 5	DNA replication, Transcription, Translation
14- T	25-27	Review, Activity
14- Th (4/27)	8, 15, 17, 19, 21, 24- 27	Exam 4

FINAL: Plan to attend the final exam time slot (TBA)

Changes to the syllabus

I have provided this syllabus as guide and have made every attempt to provide an accurate overview of the course. However, as the instructor, I reserve the right to modify this document during the semester, if necessary, to ensure that we achieve the course learning objectives.

OTHER IMPORTANT INFORMATION

ITS Service Desk

The ITS Service Desk is your point of contact for your RIT Computer Account, network, or technology-related issues. Create a [work request](#) ticket and connect with ITS specialists.

- Phone Support: (585) 475-4357
- In Person: [Frank E. Gannett Hall, Room 1113](#)

Academic Integrity Statement

As an institution of higher learning, RIT expects students to behave honestly and ethically at all times, especially when submitting work for evaluation in conjunction with any course or degree requirement.

D.08.0 Student Academic Integrity Policy

IV. ACADEMIC INTEGRITY

A breach of student academic integrity falls into three basic areas: cheating, duplicate submission and plagiarism

A. Cheating: Cheating is any form of fraudulent or deceptive academic act, including falsification of data, possessing, providing, or using unapproved materials, sources, or tools for a project, exam, or body of work submitted for faculty evaluation.

B. Duplicate Submission: Duplicate submission is the submitting of the same or similar work for credit in more than one course without prior approval of the instructors for those same courses.

C. Plagiarism: Plagiarism is the representation of others' ideas as one's own without giving proper attribution to the original author or authors. Plagiarism occurs when a student copies direct phrases from a text (e.g. books, journals, and internet) and does not provide quotation marks or paraphrases or summarizes those ideas without giving credit to the author or authors. In all cases, if such information is not properly and accurately documented with appropriate credit given, then the student has committed plagiarism.

Do not cheat. Avoid the appearance of cheating in this class. Do not allow others to cheat from you. If you are caught cheating on any assignment or exam, appropriate academic disciplinary action will be taken to the fullest extent allowed by the University.

<https://www.rit.edu/academicaffairs/policiesmanual/d080>

Statement on Reasonable Accommodations

RIT is committed to providing academic adjustments to students with disabilities. If you would like to request academic adjustments such as testing modifications due to a disability, please contact the Disability Services Office (DSO). <https://www.rit.edu/disabilityservices/> After you receive academic adjustment approval, it is imperative that you see me during office hours so that we can work out whatever arrangement is necessary.

Course Copyright Policy

All course materials students receive or to which students have online access are protected by copyright laws. Students may use course materials and make copies for their own use as needed, but unauthorized distribution and/or uploading of materials without the instructor's express permission is strictly prohibited. For example, uploading course materials or exams to any study site constitutes a violation of this policy; students who engage in such distribution may be held in violation of the University's Code of Conduct, and/or liable under Federal and State laws.

Starfish

This course participates in the RIT Starfish academic alert system. When I am concerned about a student's academic performance, I may raise an academic alert to notify the student and their advisor(s). If you receive an academic alert email, it is your responsibility to contact me as soon as possible to discuss the issue and identify people and resources to help you move forward.

Statement on Title IX

Title IX violations are taken very seriously at RIT. RIT is committed to investigate complaints of sexual discrimination, sexual harassment, sexual assault and other sexual misconduct to ensure that appropriate action is taken to stop the behavior, prevent its recurrence, and remedy its effects.

<https://www.rit.edu/fa/compliance/title-ix>

Counseling and Psychological Services

Many students at RIT face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times. These services are provided by

staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

Location: Second floor of the August Center building (above the Student Health Center)

Email: caps@rit.edu

For urgent matters during business hours, contact Counseling and Psychological Services at 585-475-2261. For urgent matters that cannot wait for business hours, call 1-855-436-1245 to speak with a mental health provider or call Public Safety at 585-475-3333.

National Suicide Hotline: 1 800 273-8255

Crisis Text Line: Text HOME to 741741