Rutgers University | Camden

General Biochemistry I, Section, 01, Fall 2023

Tuesdays and Thursdays 11:10am-12:30pm

Classroom: SCI-LH

Instructor:
Dr. Kimmie Wodzanowski
kimberly.wodzanowski@rutgers.edu

Office Hours: 10:30-11:05 Tues/Thurs or by appointment

Course Description: General Biochemistry I is an advanced introduction to the major macromolecules in living organisms. It will allow students to use their background in chemistry to appreciate the machinery of the cell at the molecular level.

Biochemistry I will cover these major themes from biochemistry, with an emphasis on the molecular basis of these topics:

- pH and buffers
- Amino acids and proteins
- Protein folding and structure
- Enzyme mechanisms, kinetics, and regulation
- Nucleic acids, DNA, and RNA structure
- Carbohydrates
- Lipids and membranes, membrane transport

Course Objectives:

After this course, students should be able to:

- Understand the principles of protein and nucleic acid structure
- Apply the understanding of protein structure to enzyme mechanism and kinetics
- Calculate values important to biochemistry like pH and Kd
- Understand the structure and importance of carbohydrates
- Understand the structures of lipids and their roles in cellular membranes
- Apply the principles of protein and lipid structure to understand the molecular basis of membrane transport

Recommended Textbook:

Lehninger Principle of Biochemistry book 8th edition (MacMillan Learning).

The textbook is NOT required, but this will be the guide of the course, and I will provide the corresponding chapters to this book in the syllabus as supplemental reading.

Required Materials:

1. Access to Canvas – Students will need access to Canvas for course information, announcements, class materials, and to upload problem sets. Please contact me if you do not have consistent internet access or Canvas access.
2. Calculator – there will be some math in class, on problem sets, and on exams. Students will not be permitted to use cell phones as calculators during exams. Please contact me if you do not have access to a scientific (at least a log function) calculator

Assessments and Grading:

This course will have three midterm exams and a cumulative final exam. There will also be several problem sets (to be done outside of class) and short weekly quizzes (in class) on Tuesdays. Assignments will be posted on Canvas and due by 11 am on their respective due dates. Assignments will not be accepted after this time. **Students needing an extension for any reason must reach out by 9 pm the day before the assignment is due.**

Life happens, and that is okay, so flexibility in your grade is built in. **There will be no makeup-exams or quizzes in this class, but your lowest exam grade (not including the final) and lowest quiz grade will be dropped at the end of the semester.**

In class participation grade will be assessed as follows:

- In class worksheets will be graded for completeness.
- Clicker questions throughout the lecture will be graded on participation in answering, not correctness.
- Attendance of up to two missed classes will receive full credit for attendance. Any missed class beyond that will result in 0.5% loss of in class participation percentage. If you have an outstanding personal concern that will affect your attendance, please talk to me privately as soon as the issue arises.
- Students more than 15 minutes late will be counted as absent for that class. There will be no make up quizzes for students late to quiz days.

Your final grade in the course will be determined as follows:

Assessment	**Total Percent**
Quizzes (drop lowest)	10% (1% each)
Exams (drop lowest)	40% (20% each)
Problem Sets	15% (3% each)
In Class Participation (Worksheets, attendance, etc.)	10%
Final Exam	25%
Total	100%

The grading scale for the course is as follows:

Grade	**Final Percent Range**
A	90-100
B+	85-89
B	80-84
C+	75-79
C	70-74
D	60-69
F	0-59

Schedule and Assignments:

These are tentative dates for topics to be discussed in class and are subject to change. Any changes to the schedule will be discussed in class, and subsequent assignment dates will be adjusted accordingly. **Quiz and exam dates will not change.**

Date	**Topic**	**Assignment Given**	**Assignment Due**	**Suggested Reading**
9/5	Introduction, Syllabus, Foundations of Biochemistry Review		Intro Survey	Chapter 1
9/7	Water, pH			Chapter 2
9/12	Amino Acids, Peptides, and Proteins	Quiz 1, Problem Set 1		Chapter 3
9/14	Amino Acids, Peptides, and Proteins			Chapter 3
9/19	Amino Acids, Peptides, and Proteins	Quiz 2	Problem Set 1	Chapter 3
9/21	Protein Structure	Problem Set 2		Chapter 4
9/25	Protein Structure	Quiz 3		Chapter 4
9/28	Protein Function		Problem Set 2	Chapter 5
10/3	Protein Function/Exam Review	Quiz 4		Chapter 5
10/5	**Exam #1**			
10/10	Enzymes	Problem Set 3		Chapter 6
10/12	Enzymes			Chapter 6
10/17	Enzyme Kinetics	Quiz 5	Problem Set 3	Chapter 6
10/19	Enzyme Kinetics			Chapter 6
10/24	Carbohydrates and Glycobiology	Quiz 6		Chapter 7
10/26	Carbohydrates and Glycobiology	Problem Set 4		Chapter 7
10/31	Nucleic Acids	Quiz 7		Chapter 8

11/2	Nucleic Acids		Problem Set 4	Chapter 8
11/7	Nucleic Acids	Quiz 8		Chapter 8
11/9	**Exam #2**			
11/14	Lipids			Chapter 10
11/16	Lipids			Chapter 10
11/21	Membranes and Transport	Quiz 9, Problem Set 5		Chapter 11
11/23	NO CLASS-HAPPY THANKSGIVING!			
11/28	Membranes and Transport	Quiz 10		Chapter 11
11/30	Biosignaling		Problem Set 5	Chapter 12
12/5	Biosignaling	Quiz 11		Chapter 12
12/7	**Exam #3**			
12/12	Review for Final			

Student Accommodations:

Rutgers University welcomes students with disabilities into all the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form at https://webapps.rutgers.edu/student-ods/forms/registration. Accommodations are not retroactive and are effective only upon submission of the LOA to the instructor.

The University's Code of Student Conduct:

It is the responsibility of each and every student to have read the Rutgers University Code of Student Conduct, as it specifies the obligations of any individual enrolled as a student. If you have not read it, it is suggested that you do. The standards of classroom (virtual meeting, in this case) behavior are dictated by this code of conduct. Accordingly, students may not interfere with classroom procedures by distracting or disruptive actions (e.g., talking while the instructor is talking, making distracting noises, coming late to class, allowing a cell phone to ring). Any students who engage in such prohibited acts can and may be penalized (e.g., asked to leave the meeting for the remainder of the class period). Please silence or turn cell phones off during these sessions to minimize distractions (if possible).

Academic Integrity: Every student is prohibited from engaging in violations of academic integrity. Note that every instructor is ethically bound to follow certain procedures once a student is caught, or suspected of, breaching academic integrity (see Rutgers University Academic Integrity Policy). Any material submitted by a student in this course for academic credit (i.e., grading) must be that student's own work. Also, all students should strictly adhere to the rules governing any quiz, exam or homework that is assigned.

The Rutgers University Academic Policy is found at http://academicintegrity.rutgers.edu. All students are expected to show respect to everyone both on and off campus and to abide by this policy.

Audio/Visual Recordings: Neither audio nor video recordings of lectures or recitations are allowed without the explicit consent of the instructor. Also, listening to any audio or video recordings during class meetings is not allowed.

Campus Resources

Full list: https://newstudents.camden.rutgers.edu/resources

School of Arts and Sciences Office of Academic Advising

- Monday-Friday: 8:30 am-5:00pm
- (856) 225-6043
- ASadvise@camden.rutgers.edu

School of Business Office of Academic Advising

- Monday through Thursday: 9:00am-5:00pm. Fridays 9:00am- 1:00pm
- (856) 225-6216
- acadsvcs@camden.rutgers.edu

School of Nursing Office of Academic Advising/SNC-CARES

- Monday through Friday: 9:00am-4:00pm
- (856) 225-6281
- nursing@camden.rutgers.edu

Student Wellness Center

- Monday through Friday: 8:30am-4:30pm
- (856) 225-6005
- https://wellnesscenter.camden.rutgers.edu

Learning Center

- Monday through Friday from 9:00am-12:00pm and 2:00pm-4:00pm
- (856) 295-1826
- rclc@camden.rutgers.edu

Student Success Coach Office

- Monday through Friday: 9:00am-5:00pm
- (856) 225-2183
- successcoach@camden.rutgers.edu

Career Center

- Monday & Thursday: 8:30am-6:00pm. Tuesday, Wednesday, Friday: 8:30am-4:30pm
- (856) 225-6046

- careercenter@camden.rutgers.edu

TRiO Student Support Services

- Monday through Friday: 8:30am-5:00pm
- (856) 225-6229
- https://trio.camden.rutgers.edu/resources

Disability Services Offices

- Monday through Friday: 8:30am-4:30pm
- (848) 202-3111
- disability-services@camden.rutgers.edu

Food Pantry

- Tuesday and Thursday: 1:00pm-3:45pm
- (856) 225-6005
- madridm@camden.rutgers.edu