

BIO/CHM 370 Biochemistry 1 Spring 2023

Sections 19305/18580

Instructor

Dr. Cohen: Monday 9am-10am, Wed 12pm-1pm or by appointment, Leah.cohen@csi.cuny.edu

Text Books

Achieve: Lehninger Principles of Biochemistry 8th Edition –David L. Nelson and Michael M. Cox
See Explanation Below

Course Hours: Mon & Wed 2:30-4:25 PM, 4S-215

Course Outline

DATE	TOPIC	READING
Jan. 25	Introduction, The Molecular Logic of Life, Cells	Chapter 1
Jan. 30	Biomolecules & Water	Chapter 2
Feb. 1	Amino Acids, Peptides & Proteins	Chapter 3
Feb. 6	Proteins 3D Structure	Chapter 4
Feb. 8	Protein 3D Structure/ Protein Function	Chapters 4/5
Feb. 13	NO CLASSES SCHEDULED	
Feb. 15	Oxygen Binding, Antibodies	Chapter 5
Feb. 20	NO CLASSES SCHEDULED	
Feb. 21	Exam Preparation Classes follow Monday schedule	
Feb. 22	First Exam (Chapters 1-5)	
Feb. 27	Enzymes- Introduction	Chapter 6
Mar. 1	Enzyme Kinetics/Mechanism	Chapter 6
Mar. 6	Enzyme Mechanism/Regulation	Chapter 6
Mar. 8	Carbohydrates	Chapter 7
Mar. 13	Nucleic Acids- Structure	Chapter 8
Mar. 15	DNA-Based Inform Technology	Chapter 9
Mar. 20	Lipids	Chapter 10
Mar. 22	Biological Membranes/Transport	Chapter 11
Mar. 27	Exam Preparation	
Mar. 29	Second Exam (Ch 6- Ch 10)	
Apr. 3	Biological Signaling	Chapter 12
Apr. 5-13	SPRING BREAK	
Apr. 17	Bioenergetics; Oxidation-Reduction Reactions; Regulation	Chapter 13
Apr. 19	Glycolysis	Chapter 14
Apr. 24	Gluconeogenesis	Chapter 14
Apr. 26	Citric Acid Cycle	Chapter 16
May 1	Oxidation of Fatty Acids	Chapter 17
May 3	Third Exam (Chapters 11-16)	
May 8	Oxidative Phosphorylation	Chapter 19
May 10	ATP Synthesis,	Chapter 19
May 15	Last Class -Review for Final	
May 17-23	Final exams	

Instructions concerning course text

Instructional Material should be purchased through a program called Achieve which provides students with an E-Copy of the textbook (4-year access) and a library of resources. The resources include homework problems with solutions and with feedback concerning errors made. Hints are also provided on how to proceed if the answers are incorrect. They also provide reading quizzes, test questions and supplementary videos that walk students through various chemical and biochemical processes. The following options will be available to you as a student:

1) Achieve (1-Term Access) is ~\$121

- ISBN: 9781319230890

[This would be a possible choice for students who plan to only take Biochemistry 1] *comes with e-book and iClicker access*

2) Achieve (2-Term Access) is ~\$171

- Bookstore ISBN: 9781319322328 Macmillan ISBN:9781319322298

[This would be the correct choice for students who plan to take Biochemistry 1 and Biochemistry 2 in the same year]*comes with e-book and iClicker access*

3) Achieve (1-Term Access) + Looseleaf is ~\$165

- Bookstore ISBN: 9781319408886 Macmillan ISBN: 9781319408893
- At the Macmillan site this will be found under the Packages tab to get with Achieve

comes with the e-book and students will also get the loose-leaf sheets for all chapters in the text (paperback book that pages can be removed easily)

4) Achieve (2-Term Access) + Looseleaf is ~\$212

- Bookstore ISBN: 9781319408923 Macmillan ISBN: 9781319408930
- At the Macmillan site this will be found under the Packages tab to get with Achieve

comes with the e-book and students will also get the loose-leaf sheets for all chapters in the text (paperback book that pages can be removed easily)

5) Achieve (2-Term Access) + Paperback is \$347.99 to buy but there are rental options

- Bookstore: not available Macmillan ISBN: 9781319408916
- At the Macmillan site this will be found under the Packages tab to get with Achieve

comes with e-book and students get a textbook

The pricing shown reflects pricing at the CSI bookstore (<https://csi.textbookx.com/institutional/index.php>).

The Achieve package can also be purchased directly from Macmillan Learning

(<https://store.macmillanlearning.com/us/product/Lehninger-Principles-of-Biochemistry/p/1319228003>).

The Macmillan store will prompt you for a course ID, this ID is **heq54g** for the Spring 2023 semester.

Further, if you purchase a package from Macmillan Learning that requires shipping (i.e., Looseleaf or Paperback books, enter the Promo code SHIPFREE at Step 4 of checkout for free shipping.

The course will be taught using Achieve and students are required to purchase, at a minimum, option 1 above. All homework will be available only through Achieve. See below for grading policy.

iClicker is available through Achieve. This will be used as a tool to answer questions during class. Answering these questions will count towards your attendance and your participation grades. You are required to register for iClicker. More information will be available on Blackboard.

Course Structure

The course outline is a tentative schedule of the sequence in which various topics will be covered. You will benefit most if you have read the text prior to attending the lecture. I will presume you will do so. Biochemistry is a fun course. It touches on exciting, contemporary topics that are of interest to both biologists and chemists. It should be an enjoyable experience. I am excited to be your instructor and look forward to stimulating your passion for the discipline of Biochemistry. However, to do well will require your commitment and effort.

Grading

There will be 3 exams, quizzes and homework assignments, which will constitute your class average. The breakdown of the class average is as follows:

Exams	80%
Quizzes	8%
Homework Assignments	8%
Attendance/Participation	4%

To be credited for attendance one must have three or fewer absences. Attendance will be taken with iClicker which comes as part of the Achieve package. You must answer the majority of iClicker questions to have your attendance counted. The quizzes will be given weekly at the start of one of the lectures and will be on material from the previous two lectures. The quiz questions will be taken from Achieve.

The exams will be a combination of multiple choice questions and short answer/calculations. Scantrons are no longer provided by the department and the college no longer sells them. Here is a link to the scantrons that work in the reader in our office.

Official Scantron Brand 882-E Answer Sheet (50 Pack):<https://a.co/d/9Mmf19H>

Your final grade will be based on the class average (60%) and the comprehensive final (40%).

Learning Objectives

- The student should understand the chemical nature of the major classes of biomolecules: proteins, nucleic acids, carbohydrates and lipids.
- The student should understand the relationship between the chemical structure of a protein and its three dimensional structure.
- The student must understand the relationship between the three-dimensional structure of proteins and nucleic acids and their biological function.
- The student must understand quantitative aspects of enzyme kinetics and ligand binding.
- Students must understand the structure and function of membranes and the involvement of the membrane in metabolite transport and cell-cell communication.
- Students must understand the physical principles underlying bioenergetics and be able to predict the directionality of metabolic reactions.
- Students must be able to follow metabolic pathways involved in energy production and the biosynthesis of intermediates.

Blackboard

Lecture slides, pre-recorded lectures, and general announcements will be posted on Blackboard. Homework problems and solutions will either be through Blackboard or Achieve. You should therefore access the course home page on a regular basis. Announcements will be emailed through Blackboard, which will go to your registered CUNY address, so make sure that your address on Blackboard is up to date and that you check the corresponding account.

Office Hours

Dr. Cohen will hold office hours as indicated above and will be available during these times to answer questions regarding the class, clarify any topics from the lecture and review homework problems.

Attendance Policy

You are required to attend each class on time. The in-class quizzes will be held at the beginning of class.

Last day to drop the course

According to CSI's Spring 2023 Academic Calendar, the last day to withdraw with the grade of "W" without permission of an instructor or Chairperson is May 16, 2023.

Unexpected College Closure

Please check our course Blackboard page for announcements and instructions.

Center for Student Accessibility:

If you believe that you have a disability requiring an accommodation, please contact the Center for Student Accessibility at 718-982-2510. You can also check out their website at www.csi.cuny.edu/csa/. You must notify your instructor and lab technician about the accommodation at the beginning of the semester.

Academic Honesty

All students are expected to follow the CUNY policies related to academic integrity. You shouldn't copy any other person's work including any online resources as your own. Students must work independently on all quizzes and exams. Any forms of cheating or plagiarism on tests will result in a zero point for your assignment and may result in an **F** grade of the course. Also, any academic dishonesty will be reported to the college authority.