

University of Pennsylvania
CHEM 5510: Biological Chemistry I
Fall Semester 2022

Instructor: Elizabeth Rhoades (elizabeth.rhoades@sas.upenn.edu)
Office hours: TBD
Teaching assistant: TBD
Lecture: Tuesdays, Thursdays, 8:30-9:50a
Location: DRLA4

We will meet every Tuesday and Thursday beginning Tuesday, 30 August and ending Thursday, 8 December except for the following:

Tuesday, 6 September
Tuesday, 4 October
Tuesday, 6 October – Fall break
Thursday, 24 November – Thanksgiving break

Evaluation:

1. Class participation – in class assignments, discussions, and homeworks – 30%
2. Exams (3 non-cumulative exams) - 20% each – 60%
3. Final project (oral presentation) – 10%

Topics covered (more or less in order)

- Amino acids
- Secondary structure
- Tertiary structure
- Protein folding
- Globular proteins
- Membranes and membrane proteins
- Intrinsically disordered proteins

Textbook: *Introduction to Proteins : Structure, Function, and Motion*, Second Edition by Amit Kessel and Nir Ben-Tal

You do not need to buy this book; I will assign optional supplementary readings from this book based on the material we are covering. It is available through the Course Materials@ Penn Libraries link on Canvas

A good intro biochemistry textbook is a helpful reference; there will be required reading from the primary literature which will be posted on Canvas.

Class participation: Over the course of the semester, we will discuss in class ~9 original research articles; you will have the opportunity to answer ~3 questions (in writing, handed in during class) which will be graded. You can drop the lowest three of these grades.

Absences: If you are absent from the class on a day we have an in class graded assignment, you will receive '0' on the assignment if the absence is not excused. If you know you are going to miss a class because of an excused reason (religious observation, job/med school interview, illness), please let me know by email (i.e. it's fine to tell me in person, but also send in writing) **in advance** of the class, your absence is excused. If the absence is excused, you do not make up the in class work; it simply does not count towards to your total score. To illustrate, if the total in class points over the semester is 100 and you are excused on a day where 10 points are possible, then your final grade will be out of 90.

Group project

This will be based on a primary literature paper.

Detailed calendar:

Tuesday, 30 August – Intro and Lecture 1

Thursday, 1 September – Lecture 2

Tuesday, 6 September – **no class**

Thursday, 8 September – Lecture 3; Paper 1 discussion

Tuesday, 13 September – Lecture 4

Thursday, 15 September – Lecture 5; Paper 2 discussion

Tuesday, 20 September – Lecture 6

Thursday, 22 September – Lecture 7; Paper 3 discussion

Tuesday, 27 September – Lecture 8

Thursday, 29 September – **Exam 1** (Lectures 1-8; Papers 1-3)

Tuesday, 4 October – **no class**

Thursday, 6 October – **no class – Fall break**

Tuesday, 11 October – Lecture 9

Thursday, 13 October – Lecture 10; Paper 4 discussion

Tuesday, 18 October – Lecture 11

Thursday, 20 October – Lecture 12; Paper 5 discussion

Tuesday, 25 October – Lecture 13

Thursday, 27 October – Lecture 14; Paper 6 discussion.

Tuesday, 1 November – Lecture 15

Thursday, 3 November – **Exam 2** (Lectures 8-15; Papers 4-6)

Tuesday, 8 November – Lecture 16

Thursday, 10 November - Lecture 17; Paper 7 discussion

Tuesday, 15 November – Lecture 18

Thursday, 17 November – Lecture 19; Paper 8 discussion

Tuesday, 22 November – Lecture 20

Thursday, 24 November – **no class – Thanksgiving break**

Tuesday, 29 November – Lecture 21; Paper 9 discussion

Thursday, 1 December – Group Project Presentations

Tuesday, 6 December – Group Project Presentations

Thursday, 8 December – Group Project Presentations

During exam period – **Exam 3** (Lectures 16-21, papers 6-9, Group projects)