

BIBC 100  
Fall Quarter 2023  
CSB 002  
MWF 1:00 to 1:50 pm

## Course Information

**Instructor:** Matt Flagg, Ph.D.  
mflagg@ucsd.edu

**Office Hours:** Wednesday 2:00-3:00 pm **HSS 1145LA**  
Thursday 11:00-12:00 pm **HSS 1145LA**  
Additional office hours available by appointment

**Discussion:** Fridays at 8:00 – 8:50 am on Zoom

### IAs:

Yingyin (Katie) Li—yil097@ucsd.edu

Office hours: Tuesdays 12:30–1:30 and Fridays 2–3 at Fairbanks coffee cart in Revelle

Oliver Zhou—oczhou@ucsd.edu

Office hours: Mondays 2:15-3:15 beside the Peterson Hall mural

### Contacting Matt, Yingyin, or Oliver

This quarter, the IAs and I will be observing strict business hours. We'll respond to emails between the hours of 9 am and 5 pm. Please, bear with us. Our instructional team is much smaller this quarter, and we need to adjust to make things doable.

Your first source for help should be the discussion boards on Canvas. We will check them on a regular basis. Otherwise, please try to attend office hours if you have questions related to course material. It is much easier to explain concepts in person than by email. If you need to send us an email, please include "BIBC 100" in the subject line and allow a business day for us to reply. If we have not replied in a business day, please send the email again. I don't respond to email on weekends.

### Weekly Discussion Boards

Due Sundays by 11:59 pm

### Weekly Quizzes

Due Sundays by 11:59 pm

### Weekly Problem Sets

Released Mondays, due the next Monday by 11:59 pm

### Self-Evaluations

Released after each class, due by the following class

### Midterm 1

Friday October 20<sup>th</sup> location TBD

### Midterm 2

Wednesday November 15<sup>th</sup> location TBD

### Final exam

December 11<sup>th</sup> from 11:30 am – 2:30 pm location TBD

## Course Learning Outcomes

Upon completion of this course, learners will be able to:

1. Use thermodynamic and biochemical principles to explain how macromolecular structures assemble.
2. Use thermodynamic and biochemical principles to model protein-ligand and protein-protein binding.
3. Use thermodynamic and biochemical principles to model enzyme catalysis.
4. Use thermodynamic and biochemical principles to model allostery.
5. Use protein structure to provide mechanistic explanations of cellular and organismal functions.

## Course Materials and Tools

### Textbooks

There are no required texts for this course. However, Lehninger's *Principles of Biochemistry* and Stryer's *Biochemistry* are both good resources. Harvard has also put together a good Life Sciences textbook. There's a link in the Course Welcome module.

### Technology Requirements

The class will be podcast. Podcasts will be uploaded to the Canvas page.

iClickers will be used each class. Please be sure to bring one. You can use an iClicker or the mobile app, **but please choose one and use it every time!** The mobile app has a free trial, but it will expire by the end of the quarter!!

If you haven't registered your iClicker, please do so ASAP! There is a registration link on our Canvas page, at the bottom of the left-hand-side menu.

All discussion boards are on Canvas.

All quizzes are on Canvas.

Weekly problem sets and exams will be graded using Gradescope.

## Grading Information

97%-100%	A+	77-80%	C+
93-97%	A	73-77%	C
90-93%	A-	70-73%	C-
87-90%	B+	60-70%	D
83-87%	B	<60%	F
80-83%	B-		

Assignment	Weight
Discussion Boards	10
Weekly Quizzes	10
Problem Sets	10
Lecture attendance	15
Self-evaluations	5
Midterm 1	15
Midterm 2	15
Final Exam	20
	<b>100%</b>

## Grading Procedure

First and foremost, students in this class will NOT—in any way—be competing with one another for grades. I have no quotas for As, Bs, Cs, etc. I reserve the right to adjust the above scale, but any changes will always work in your favor. I will NOT make grading more stringent.

The midterms and final will be graded in a timely fashion. Grades will be posted on Canvas.

## Exam Regrades

All requests for an exam regrade will be taken under consideration. I do regrades by meeting with students in-person individually. Please email me and propose a time for a 15 minute meeting. Zoom is not an option, I'm sorry.

Do not ask the IAs for a grade change. I consider doing so to be a breach of academic integrity.

## Attendance, Excused Absences, and Self-Evaluation

This is a hybrid course, and as you may have noticed, in-person lecture attendance accounts for 15% of your final grade. These are basically “free” points, but I hope they make my emphasis clear. There are hundreds of YouTube videos and online courses about biology. Our classroom and *your peers* are the most valuable part of this course.

Remote section attendance is optional. We are being asked to teach in this format not because it reflects any reasonable pedagogical standards, but because it is what the department can afford given the funds UC has disbursed. Section is on Zoom, and it's formatted as a Q & A. Use section as a time to work on the problem sets.

While attendance and participation are two of my highest priorities, life happens. People have jobs, get sick, etc. So, six absences from lecture will be excused without question. Absences for any sincerely held religious belief, observance, or practice will be accommodated.

After each lecture, you will be asked to complete a brief self-evaluation on Canvas. These are graded for completion, so you have leeway to answer honestly. I've worked with many talented undergrads over the years, and most are in the midst of a quarter-life crisis, unsure of what they want to do for the next forty-five years. Self-evals offer a moment to pause and reflect upon your engagement. I don't expect everyone to love this content, but now is the right time to discover if biology intrinsically motivates you!

## Discussion Boards

Meaningful participation on the discussion boards is required each week. You should do one of the following:

- 1) List a learning objective and ask a meaningful question about it.
- 2) Respond to a classmate's question in a meaningful way.

Examples of each will be provided during the first lecture.

## Extra Credit

Extra credit is available for completion of Student Evals of Teaching (SETs).

70% completion – 0.5% extra credit  
80% completion – 0.75% extra credit  
90% completion – 1% extra credit

## Late or Missing Assignments

Online quizzes and discussion boards will be due at the same time every week. Those due dates are listed on Canvas. If an extenuating circumstance arises, please contact me ASAP, and we can work on accommodations!

## General Course Schedule

Topics to be covered
Molecular interactions and thermodynamics
Lipid-bilayer structure
DNA structure
Protein structure and folding
Binding
Catalysis
Allostery
Stochasticity

## Crosscutting concepts in the course

Chemical bonding, both covalent and non-covalent

Energy of intra- and inter-molecular systems

Equilibrium, steady states, and associated constants

Three dimensional structures and their spatial interactions

## Student Resources for Support and Learning

### Library Help

For questions about eReserves and research tools:

<https://library.ucsd.edu/ask-us/triton-ed.html>

### Learning Resources

[Writing Hub](#)

[Supplemental Instruction](#)

[Tutoring](#)

[Mental Health Services](#)

### Community Centers

Learn about the different ways UC San Diego explores, supports and celebrates the many cultures that make up our diverse community.

<https://students.ucsd.edu/student-life/diversity/index.html>

### Accessibility

Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison in the department in advance so that accommodations may be arranged.

Contact the OSD for further information: <https://disabilities.ucsd.edu/>.  
osd@ucsd.edu | 858. 534.4382

### Inclusion

I am committed to creating a learning environment that supports diversity of thought, perspective, experience, and identity. This will be key to our success. Science is all about pooling insight and seeing problems from as many perspectives as possible. So, please share your thoughts.

I am also open to anonymous feedback am fully willing to facilitate it.

Office of Equity, Diversity, and Inclusion:  
858.822.3542 | [diversity@ucsd.edu](mailto:diversity@ucsd.edu) | <https://diversity.ucsd.edu/>  
<https://students.ucsd.edu/student-life/diversity/index.html>  
<https://regents.universityofcalifornia.edu/governance/policies/4400.html>

### Basic Needs

Any student who has difficulty accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in this course, is encouraged to contact:

[foodpantry@ucsd.edu](mailto:foodpantry@ucsd.edu) | [basicneeds@ucsd.edu](mailto:basicneeds@ucsd.edu) | (858)246-2632

### Technical Support

For help with accounts, network, and technical issues:

<https://acms.ucsd.edu/contact/index.html>

For help connecting to electronic library resources such as eReserves and e-journals:

<https://library.ucsd.edu/computing-and-technology/connect-from-off-campus/>

For help installing Zoom for video conferencing, virtual office hours, synchronous lectures:

<https://blink.ucsd.edu/technology/file-sharing/zoom/index.html>

## UC San Diego Academic Policies

### Academic Integrity

Academic Integrity is expected of everyone at UC San Diego. This means that you must be honest, fair, responsible, respectful, and trustworthy in all of your actions. Lying, cheating, or any other forms of dishonesty will not be tolerated because they undermine learning and the University's ability to certify students' knowledge and abilities. Thus, any attempt to get, or help another get, a grade by cheating, lying or dishonesty will be reported to the Academic Integrity Office and will result in sanctions. Sanctions can include an F in the class and suspension or dismissal from the University. So, think carefully before you act. Before you act, ask yourself the following questions: a) is my action honest, fair, respectful, responsible, and trustworthy, and b) is my action authorized by the instructor? If you are unsure, don't ask a friend, ask your instructor, instructional assistant, or the Academic Integrity Office. You can learn more about academic integrity at [academicintegrity.ucsd.edu](http://academicintegrity.ucsd.edu).

(Source: Bertram Gallant, T. (2017). Teaching for integrity. UC San Diego Academic Integrity Office.)

Refer to:

[UCSD Student Conduct Code](https://students.ucsd.edu/_files/student-conduct/ucsandiego-student-conduct-code_interim-revisions1-16-18.pdf)

([https://students.ucsd.edu/\\_files/student-conduct/ucsandiego-student-conduct-code\\_interim-revisions1-16-18.pdf](https://students.ucsd.edu/_files/student-conduct/ucsandiego-student-conduct-code_interim-revisions1-16-18.pdf))

[Principles of Community](https://ucsd.edu/about/principles.html)

(<https://ucsd.edu/about/principles.html>)

### Religious Accommodation

It is the policy of the university to make reasonable efforts to accommodate students having bona fide religious conflicts with scheduled examinations by providing alternative times or methods to take such examinations. If a student anticipates that a scheduled examination will occur at a time at which his or her religious beliefs prohibit participation in the examination, the student must submit to the instructor a statement

describing the nature of the religious conflict and specifying the days and times of conflict.

For final examinations, the statement must be submitted no later than the end of the second week of instruction of the quarter.

For all other examinations, the statement must be submitted to the instructor as soon as possible after a particular examination date is scheduled.

If a conflict with the student's religious beliefs does exist, the instructor will attempt to provide an alternative, equitable examination that does not create undue hardship for the instructor or for the other students in the class.

#### Discrimination and harassment

The University of California, in accordance with applicable federal and state laws and university policies, does not discriminate on the basis of race, color, national origin, religion, sex, gender, gender identity, gender expression, pregnancy (including pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition, genetic information, ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (including membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services). The university also prohibits harassment based on these protected categories, including sexual harassment, as well as sexual assault, domestic violence, dating violence, and stalking. The nondiscrimination policy covers admission, access, and treatment in university programs and activities.

If students have questions about student-related nondiscrimination policies or concerns about possible discrimination or harassment, they should contact the Office for the Prevention of Harassment & Discrimination (OPHD) at (858) 534-8298, [ophd@ucsd.edu](mailto:ophd@ucsd.edu), or [reportbias.ucsd.edu](http://reportbias.ucsd.edu).

Campus policies provide for a prompt and effective response to student complaints. This response may include alternative resolution procedures or formal investigation. Students will be informed about complaint resolution options.

A student who chooses not to report may still contact CARE at the Sexual Assault Resource Center for more information, emotional support, individual and group counseling, and/or assistance with obtaining a medical exam. For off-campus support services, a student may contact



the Center for Community Solutions. Other confidential resources on campus include Counseling and Psychological Services, Office of the Ombuds, and Student Health Services.

CARE at the Sexual Assault Resource Center  
858.534.5793 | [sarc@ucsd.edu](mailto:sarc@ucsd.edu) | <https://care.ucsd.edu>

Counseling and Psychological Services (CAPS)  
858.534.3755 | <https://caps.ucsd.edu>

## Subject to Change Policy

The information contained in this course syllabus, other than the grade and absence policies, may be—under certain circumstances such as mutual agreement to enhance student learning—subject to change with reasonable advance notice.