Bi214 General Biology IV: Mechanisms

This course is about how stuff works: the mechanisms by which biological processes, practiced by all cellular life, operate. Through a combination of lectures, problem solving, and laboratory exercises we will explore amino acid chemistry, the structures and functions of proteins, the genetics of biochemical pathways, the structure and regulation of prokaryotic and eukaryotic genes, and the genetics and molecular biology underlying development. Bi211 and Bi212, or the equivalent, and a full year of General Chemistry are prerequisites.

Contact Info

Instructors	GEs	BTUs/BULAs	BULAs
Dr. Connolly (Lecture) amyc@uoregon.edu	Anissa Benabbas anissab@uoregon.edu	Starla Chambrose starlac@uoregon.edu	Henry Hochstatter hhochsta@uoregon.edu
Katie Perez (Lab Assistant) kperez@uoregon.edu	Noah Dillon ndillon2@uoregon.edu	Dimitra Fellman dimitraf@uoregon.edu	Phil Nosler pnosler@uoregon.edu
	Gilia Patterson gpatters@uoregon.edu	Filadelfia Tadjibaeva fbt@uoregon.edu	Josey joseyp@uoregon.edu
	Alyssa Quiogue aquiogue@uoregon.edu	Emily Yeh eyeh@uoregon.edu	
	Tim Wheeler twheele3@uoregon.edu		

Class Modules

The lecture portion will be held asychronously, meaning there is no required time for you to be present in class or on zoom. You will have modules that correspond to a Mon/Wed class, with the exception of Memorial Day and exam days. Please see schedule on the last page. Modules will consist of the learning objectives, video lectures, practice problems, suggested problems sets, suggested reading assignments, and a for-credit quiz. **You are allowed to work with your peers on quizzes, but you should still understand why you are choosing the answer you are so as to be prepared for exam day.**

Labs

Labs will be held remotely, but synchronously, meaning you will be required to come to your weekly labs. **Attendance is required, you can have one attendance dropped.** You will need to sign on through your lab section on Canvas. The labs that you would normally have completed in person have been converted to virtual activities you will walk through in Canvas. These activities are structured in a quiz on Canvas so that you can answer questions as you go. The quizzes have due dates, but no time limits. So you may open them whenever you wish and begin working on them right away**. You are allowed to work with your peers on labs, but your work should still be your own.** In your lab section, your GEs will provide additional background and add context to what you have been working on and can help you with areas of your lab assignment that you have questions about.

Exams

There will be three exams in this class (two midterms and a final). **These dates were on the schedule when you registered for class in Winter. They are mandatory times you must be present**. The dates are as follows:

Midterm 1: 6:15-7:45 PM Monday April 26
Midterm 2: 6:15-7:45 PM Monday May 24
Final exam: 6:15-7:45 PM Tuesday, June 8

Academic Integrity for Exams:
Due to these atypical circumstances, you will be taking your exams on Canvas unproctored. Therefore you are being asked to follow an honor system for the exams. Please take this seriously and know that an incredible level of trust is being given to you to take the exams from home unmonitored.

We ask that you

- do your own work; work alone and do not receive help from others
- do not share information (screenshots, verbatum words, answers, types of questions) to your peers or other individuals.
- do not receive information from your peers about the quiz.

You may

- use whatever resources that are at your disposal APART from other people! This means, you may use your notes, your textbook, Canvas material, or google searches. But be warned, the exams are timed so you will want to make sure you are prepared and are not searching for answers. Additionally, the exams require critical thinking, so you will again not want to depend upon these resources. The best way to prepare for the exam is to practice problems ahead of time.

Labs and Office Hours

Lab Times	Instructor	BULAs
Thursday 10:15-11:45 PM	**Gilia**	Emily
Thursday 12:15-1:45 PM	**Anissa**	Henry
Thursday 2:15-3:45 PM	**Noah**	Josey
Thursday 4:15-5:45 PM	**Gilia**	Josey
Friday 10:15-11:45 PM	**Tim**	Starla
Friday 12:15-1:45 PM	**Alyssa**	Filadelfia
Friday 2:15-3:45 PM	**Noah**	Phil

Office Hours	Instructor
Monday 10:00-11:00	Dr. Connolly
Monday 2:00-3:00	Tim
Monday 4:00-5:00	Noah
Tuesday 9:00 -10:00	Alyssa
Tuesday 2:00-4:00	Dimitra
Wednesday 10:00-11:00	Dr. Connolly
Wednesday 12:00-1:00	Gilia
Wednesday 4:00-5:00	Starla
Thursday 9:00-10:00	Anissa
Thursday 1:00-3:00	Starla
Friday 9:00-10:00	Emily
Friday 11:00-12:00	Filadelfia

Conference Hour Etiquette:
For both lecture and lab, you will be invited to join office hours on Zoom. If you have a question or would like to speak, you may send a message through "chat," click the "raise your hand" button, or press the space bar to speak in smaller groups where it seems appropriate.

- Turn on your microphone to speak when you have the floor.
- Additionally, having your computer connected by ethernet may help improve your connectivity during your session.
- If you have trouble connecting to a Zoom meeting, please contact Katie Perez, kperez@uoregon.edu

Communication Guidelines to Help Streamline Getting You Help

This is a large class, so we need some organization around who students should contact for help.

I. If you have questions about module quizzes, or problem sets, labs, and content in general, please do the following in the following order.

1. Come to office hours or use the discussion board to ask a question. (The BTUs will be monitoring it frequently)
2. Email your GE
3. Email Dr. Connolly

II. For lab questions specifically, please do the following in the following order

1. Questions about lab should first be resolved in lab during your required lab time.
2. After lab is over, any remaining questions can be asked on the discussion board or should be directed to either your GE or your BULA.

While you are always welcome to contact me (Dr. Connolly) with content questions, I ask you please follow the above rules. It not only will be helpful for me, your question will probably be answered faster! Besides we have some amazing BTUs, BULAs, and GEs, many of whom are veteran teachers for this class and can help you out!

Finally, I will also communicate with you through our Canvas site. Announcements can be automatically forwarded to your UO email, and can even reach you by text. Check and adjust your settings under Account > Notifications.

Grading Questions

A. **Module quiz** grading questions, errors, and requests should be sent to your GE within one week.
B. Questions about **lab grade**s should be directed to your GE. Requests for regrades on problems that required hand grading must occur with in one week of receiving the grade.
C. Questions about **exam grades** should be sent directly to Dr. Connolly. Requests for regrades on problems that required hand grading must occur with in one week of receiving the grade.

Required Supplies

Scientific Calculator

Grading Breakdown

Lecture Content	Method
16 Modules (one a day except exam days) with lowest two dropped.	15%
Exam 1 and Exam 2 (lowest one dropped)	30%
Final Exam	35%
Lab Assignments (lowest one dropped)	15%
Lab Attendance (one day dropped)	5%

Grading Policies:

Exams: Requests to examine grading errors or to regrade quizzes and reports must be sent to your me **within one week** of your receiving the graded assignment for consideration, and must be accompanied by a written explanation.

Lab Assignments:
All lab assignments will be due the following Sunday at 11:59 PM. Lab reports turn in late will be **marked half off**. **After one week, there will be no late quizzes or late lab reports accepted**.

Accommodations for students with disabilities:
If you have a documented disability and anticipate needing accommodations in this course, please provide both your GE and myself with a notification letter from the Accessible Education Center stating your approved accommodations. If you have flexibility on attendance or due dates, it is imperative that you reach out to your GE early on to discuss an arrangement with how you are going to handle missed days or late assignments.

Class Conduct and Academic Honesty

With this class being conducted remotely, the time is more important than ever that you hold yourself to high ethical standards. All work submitted in this course must be your own. Instances of suspected cheating or plagiarism on exams, quizzes, and reports will be referred to the Office of Student Conduct and Community Standards. Your instructors take these cases seriously. Academic misconduct could result in a failing mark for quiz, exam, report or for the course. For definitions of violations, a description of the hearing process, and a summary of penalties for findings of academic misconduct, go to http://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code

Resoures for Remote Learning

Below you can find a variety of resources that may help you navigate the remote set up we will be in this Spring.

https://remote.uoregon.edu/student
https://service.uoregon.edu/TDClient/2030/Portal/Home/

Mental Health Resoures

This past year has presented a lot of new challenges. If you need someone to talk to or are struggling, there are mental health resources available to you as a UO student. Please follow the links here.

https://counseling.uoregon.edu
https://counseling.uoregon.edu/mental-health-resources

The topics below are open to change, but the exam times and lab and module due dates will stay constant unless some unforeseen event arises.

Class Schedule

Week	Date	Topic Module quizzes due at the end of the day at 11:59 PM
1 Amino Acid Introduction and Acid Base Chemistry	Mar 29	Module 1-1: • Introduction • Amino Acid Structure, Polarity and Solubility First day only: Extended due date for quiz to Tuesday at 11:59 PM
	Mar 31	Module 1-2: • Acid-Base Chemistry
	Apr 1-Apr 2	**No Lab**
2 Amino Acid and Protein Chemistry	Apr 5	Module 2-1 • Acid-Base Properties of Diprotic Amino Acids • Acid-Base Properties of Triprotic Amino Acids
	Apr 7	Module 2-1: • Polypeptide Properties
	Apr 8- Apr 9	**Lab 1: Amino Acids** Due Sunday April 11 at 11:59 PM
3 Protein Structure	Apr 12	Module 3-1: • Primary Structure • Secondary Structure (Alpha Helices and Beta-Pleated Sheets) • Secondary Structure Continued • Tertiary and Quaternary Structure
	Apr 14	Module 4-1: • Tertiary and Quaternary Structure
	Apr 15- Apr 16	**Lab 2 Protein Structure** Due Sunday April 18 at 11:59 PM
4 Hemoglobin	Apr 19	Module 4-2: • Hemoglobin and Myoglobin: structure/function, binding curve and cooperativity; • Hemoglobin cooperativity, properties of heme
	Apr 21	• Module 4-2: Hemoglobin Allostery
	Apr 22- Apr 23	**Lab 3 Hemoglobin** Due Sunday April 25 at 11:59 PM
5 DNA Structure	Apr 26	**Exam 1: (Through 1-1 though 4-2 Hemoglobin)** **6:15-7:45 PM** *Bring Calculator
	Apr 28	Module 5-2: • DNA Structure, Synthesis, Mutations
	Apr 29- Apr 30	**Lab 4 DNA structure** Due Sunday May 2 at 11:59 PM
6 Metabolic Pathways and Complementation Tests	May 3	Module 6-1: • Metabolic Pathways • Conditional Mutants
	May 5	Module 6-2: • Complementation Tests
	May 6- May 7	**Lab 5 Complementations** Due Sunday May 9 at 11:59 PM
7	May 10	Module 7-1: Complementation Tests
	May 12	Module 7-2: Transcription in Prokaryotes

Complementation Tests Continued Transcription in Prokaryotes	May 13- May 14	**Lab 6 (Discussion not lab): Under-represented women and BIPOC in science** Due Sunday May 16 at 11:59 PM
8 Lac Operon	May 17	Module 8-1: Module 4-2: Lac Operon: Negative
	May 19	Module 8-2: Lac Operon:Positive
	May 20- May 21	**Lab 7: Gene Regulation, Focus on Lac Operon** Due Sunday May 23 at 11:59 PM
9 Lac Operon Asymmetry in Yeast and Development	May 24	**Exam 2: Genetics Unit (5-2 through 8-2)** **6:15-7:45 PM**
	May 26	9-1: Asymmetry in Yeast and Development Part I
	May 27- May 28	**Lab 8: Lac Operon Lab** Due Sunday May 30 at 11:59 PM
10 Asymmetry in Yeast and Development Continued	May 31	**Memorial Day**
	June 2	10-1: Asymmetry in Yeast and Development Part II
	June 3-4	**No lab**
	Tuesday June 8	**Final Exam** **6:15-7:45 PM** *Bring Calculator