

# Course Syllabus

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## BI 213 General Biology III: Populations

Syllabus for Summer 2021

Instructor: Dr. Laurel Pfeifer-Meister

### Web Version of Bi213

This course is entirely remote. I have designed it so that it is asynchronous, which means you are not required to connect at any specific time except for the final exam which will be during the scheduled time (Friday 9/10 10:00 am-12:00 pm). That being said, we will have optional synchronous zoom sessions Monday-Thursday 10-11:50am where we will work through problems that will be due each day. I highly encourage students to attend these sessions to get the most out of the class. If you cannot attend, please watch the recorded videos and do all associated reading. We also have several hours of drop-in zoom help sessions throughout the week.

My philosophy for remote learning:

- Trust students to take initiative for their own learning.
- Provide multiple opportunities per week for interactions with instructors.
- Make synchronous content available, but not required.
- Be organized, clear, and consistent.
- Do not try to artificially limit student access to outside material: embrace that students will have access to the Internet and their peers, just as they will throughout their careers.
- Have many opportunities to get small numbers of points.

To this end, lectures will be pre-recorded and should be watched prior to each optional synchronous session at 10 am. As this is a condensed version of the course, we will fit ~2.5 weeks of content into a single week (Topic 1 on Monday/Tuesday and Topic 2 Wednesday/Thursday). Labs have been converted into tutorial exercises expanding on the content (~2 per week). On Fridays, we will have a quiz covering that weeks material. There is no midterm, but there is a cumulative final on the final Friday.

### Course Overview

In this third term of the general biology sequence we build on concepts of how cells and organisms function to study the patterns and mechanisms of evolutionary change over the past 4.5 billion years that have led to the diversity of life that exist on earth today. We begin by examining mechanisms that cause genetic change in populations over time with a special focus on natural selection. We then examine the

species concept and look at patterns of evolutionary change over long time periods. In the second half of the term, we examine ecological theory including different models of population growth and factors that regulate population growth in various organisms. We study ways in which two or more species interact, how ecological communities are formed and organized, and apply these ideas to current issues such as invasive species and loss of biodiversity. Students participate in online activities through the term to help them explore fundamental ideas in evolution and ecology.

The goals for BI 213 fall into two general categories: (1) to learn the foundational concepts related to evolution and ecology (2) to build on the skills developed in BI 211, including critical thinking and quantitative reasoning.

### **Concept-based goals:**

1. To identify the mechanisms that cause biological evolution in populations; to identify and explain the tenets of natural selection.
2. To apply the Hardy-Weinberg model to populations to investigate evolution.
3. To be able to distinguish between species concepts; to identify how and why scientists classify the organisms on earth.
4. To apply mathematical models to understand growth in populations; to describe the factors involved in regulating population growth.
5. To identify the important types of species interactions, such as competition and predation, that are important for shaping biological communities.
6. To describe diversity at the genetic, species, and functional level, including mathematical indices.
7. To become familiar with how communities changes across space and time.
8. To understand some of the ways in which humans have impacted the natural world.

### **Skill-based goals:**

1. To develop competency in the basic terminology and methodologies used in the biological sciences.
2. To learn the process of scientific inquiry and its applications.
3. To learn how to learn about biology.

## **Course Format**

### **Modules**

The course will be divided into 8 modules (2 per week) that consist of: 4 major areas of evolution and 4 major areas of ecology (see schedule below). The lecture materials for each module will be made available on Canvas by Sundays at noon and Tuesdays at noon. During each week, from Monday-Thursday, you will be asked to do a number of different activities (some graded) including:

- readings from the freely available etext, [Openstax Biology 2e](https://openstax.org/details/books/biology-2e) (<https://openstax.org/details/books/biology-2e>).
- optional readings from *Biological Sciences* by Freeman (5th/6th edition pages are listed)--this text is available through the Science Library

- pdfs and videos of lecture slides (and associated questions)
- online activities

Many activities will have due dates during the week but you will always have advance notice of when they are due. No activities need to be done at a specific time (i.e., no synchronous lectures or labs). You can complete them whenever it works best for you, as long as they are completed by their due dates/time. The due dates and times are indicated on each modules page. No late work will be accepted so please be sure to start the activities well before their due dates/times.

Every Friday there will be an online quiz on the material covered in the two modules for that week. The quizzes will be timed (90 minutes) and will need to be completed each Friday between 7 am and 8 pm (Pacific Daylight Savings Time). For students allotted more time from the AEC, I will allow that additional time for completion of the quizzes and final exam once I receive notification from the AEC office.

### ***Problem Sets (not graded)***

There will be two practice problem sets that will be posted on Canvas for each module. The solutions will be posted each week on Tuesday and Thursday's at noon. It is very important that you work on these during each week. We will help you to understand how to solve these problems via emails and online office hours (using Zoom). There will be questions on the quizzes and exams based on the practice problem questions.

### ***Exams: Weekly Quizzes and Final***

There will be 3 weekly quizzes and a cumulative final. All exams will be the same format: multiple choice/numerical/matching or short answer taken on Canvas. The weekly quizzes will be on the material from that week only (not cumulative). The final will be cumulative with slightly more emphasis on the final week's modules.

The exams will cover material from all aspects of the course including readings and online activities. They will be open-book, open-notes but not "open-friends". I expect everyone to do their own work on the exams. Getting help from others, or giving help to others, is a violation of the academic integrity guidelines of the University. Individuals who don't adhere to these guidelines may receive a failing grade for the entire course and will be reported to the Dean of Students. We are relying on everyone to conduct yourself with integrity.

Everyone will not get the exact same questions for the quizzes and exams. While the quizzes and exams are open-book, open-notes: you should be able to answer the questions without referring to your notes. The tests will be timed so you will not have time to learn about a topic while taking the exam. You will be expected to be able to answer the questions unaided, just like the types of exams you have had in past general biology courses. Exams will be designed to probe a deep understanding of the concepts and principles discussed, and an ability to apply the concepts to novel situations rather than a memorization of detail. **There will be no early or late weekly quizzes or final exam given. Everyone is required to take the final on Friday September 10th from 10:00 AM -12 PM PDT.**

## Evaluation

Component	Total Percentage
Weekly Modules: 8 total; 4% for modules 1 (first day) and 7 (Labor day) and 8% each for modules 2-6 and 8. See individual module pages for exact percentages of each component.) Modules vary each week but will usually contain a lecture with embedded quiz questions and a lab 'activity'.	56%
Quizzes each Friday: (3 total: 7% each) These quizzes will be available anytime between 7 am and 8 pm PDT (90 min. time limit).	21%
Final Exam (Friday, September 11th, 10:00-12:00 PDT)	23%

**Posting of Grades** Scores for assignments and exams will be posted on Canvas. Regularly check your scores, as you will have only one week after the posting to notify us about mistakes or omissions.

**Letter Grades** will be determined based on total points, not on individual exams and assignments.

Getting:

- >90% of the points (900) guarantees an A-
- >80% (800), B-
- >70% (700), C-
- and >60% (600), D-

In the event that scores are skewed downward, the final scores will be curved with breaks between each bin determined by “jumps” in the grade data that separate groups of students. This curve is designed so that it can only help you. If the entire class receives >90%, every student would receive an A-.

## Course Materials

- **Calculator** You will need a scientific calculator capable of doing natural logarithms and square roots for use on online activities and exams.
- **Textbook** We will primarily be using reading from the freely available etext, [OpenStax Biology 2e](https://openstax.org/details/books/biology-2e) (<https://openstax.org/details/books/biology-2e>). You are responsible for all of the assigned readings

and this material will show up on quizzes and exams. I will also post optional readings from *Biological Science*, 5<sup>th</sup> or 6<sup>th</sup> edition by Scott Freeman, which is available at the science library or fairly inexpensive online.

- **Online activities** Some activities will require you to download software; all will be freely available and we will send out links with instructions.

## Schedule

Week	Topic	Quiz <i>(due Fri. by 8 pm PDT)</i>
1	Natural Selection & Pop. Genetics	8/20
2	Forces of Evolution & Phylogenetics	8/27
3	Behavioral Ecology & Population Ecology	9/3
4	Pop. Growth & Community Ecology	no quiz
	Final Exam	Fri. 9/10 10am-12pm

## How to Communicate with Faculty and Undergraduate Teaching Assistants

- **Optional Synchronous Session** *Each day Monday-Thursday, we will hold an optional synchronous session from 10 am-12 pm where we will work through the material and assignments for that day. It is important that you have watched the lectures prior to coming to these sessions. We will make use of breakout rooms to work through activities in smaller groups. **Zoom etiquette:** My expectations for zoom are really no different than what I'd expect in the classroom. Be on time for class, wait your turn to talk and keep your discussions on topic! This translates to Zoom in the following way:*
  - Mute your microphone if you aren't talking
  - I'd prefer you use your video. Just like its helpful to see non-verbal cues in the classroom, it is also helpful to see non-verbal cues through Zoom. It can be very awkward talking to black screens with names (especially in breakout rooms).
  - Use your real name.
  - Be on time.
  - Only post chat messages relevant to the lessons.
- **Zoom Office Hours** *We have [scheduled](#) several office hours most days where you can use Zoom to participate in an office hour with one of us. We will hold these as much as possible like we do on campus. You can come with your questions about particular assignments or practice problems or just general content questions. This usually will not be a good place for more personal questions because the Zoom meeting is open to all students. It's even fine for you to work on your assignments on a separate page while also participating in the Zoom meeting. There is the ability to "chat" with another*

*student while in the Zoom meeting if you want to work on something together. Of course, we still ask that you do your own work and write your own answers. You shouldn't copy another students work. Here is the link to [Staff Contact Info and Help Sessions](#).*

- **Slack** I have created a Bi213 [Slack channel](https://join.slack.com/t/slack-mpa9696/shared_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA) [\\_ \(https://join.slack.com/t/slack-mpa9696/shared\\_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA\)](https://join.slack.com/t/slack-mpa9696/shared_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA) for this summer. This is often the most efficient way to get your questions answered in a timely manner (by both the teaching staff or your peers). You may send private messages to staff members or create small study groups within the channel. Use the #general channel for any course related questions! Click [https://join.slack.com/t/slack-mpa9696/shared\\_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA](https://join.slack.com/t/slack-mpa9696/shared_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA) [\\_ \(https://join.slack.com/t/slack-mpa9696/shared\\_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA\)](https://join.slack.com/t/slack-mpa9696/shared_invite/zt-u7sam6tg-nDOSPeSZtejlUPPTVGUaFA) to join this channel (it will only allow you to sign up with your uoregon email address).
- **Email** For more personal questions, please use our regular UO email. Please be professional in your emails and be patient while waiting for a response. You shouldn't "expect" an answer in the evening or on weekends. Here is the link to [Staff Contact Info and Help Sessions](#).

## Academic Honesty

### Academic integrity

All students will be expected to adhere to the University's guidelines on academic integrity as outlined in the [Student Conduct Code](https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code) [\\_ \(https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code\)](https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code). As detailed in the policy, academic misconduct means the violation of university policy involving academic integrity. This includes cheating ("any act of deception by which a student misrepresents or misleadingly demonstrates that the student has mastered information on an academic exercise that the student has not mastered"), and plagiarism ("using the ideas or writings of another as one's own.") The instructors have a zero tolerance policy for academic dishonesty. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. **Finally, you do not have permission to post any course related material on outside private or public websites (i.e. coursehero, chegg, groupme, etc.)**

### Honor Code

In these trying times it is especially important that we maintain the integrity of university education. Presumably we all value this or we wouldn't be participating. In our remote class, **I will ask you to certify that your Friday quizzes and final exam are your own work.** These will all be timed and Canvas automatically varies the questions students receive. We will adjust times to support students with accommodations through the Accessible Education Center. If a technological glitch disrupts your exam, don't panic. Take a photo to document the error message you're receiving and then email myself (lpfeife1@uoregon.edu and at least one TA so we can hopefully get back to you more quickly).

## Class Courtesy

Class rosters are provided to the instructors with the student's legal name. We will gladly honor your request to address you by an alternate name or gender pronoun. Please advise us of this preference early in the term (or before) so that we may address you properly.

Open inquiry, freedom of expression, and respect for difference are fundamental to a comprehensive and dynamic education. We are committed to upholding these ideals by encouraging the exploration, engagement, and expression of divergent perspectives and diverse identities. Classroom courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Our remote classroom is a learning environment, and as such should be a safe, inclusive and respectful place. Being respectful also includes using preferred pronouns for your classmates. Disrespecting fellow students as well as combative approaches, tones and/or actions are not acceptable. Please make your instructors aware if there are classroom dynamics that impede your (or someone else's) full engagement.

## Discrimination and Harassment

### *Prohibited Discrimination and Harassment*

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at [safe.uoregon.edu](http://safe.uoregon.edu) (<http://safe.uoregon.edu/>). To get help by phone, a student can also call either the UO's 24-hour hotline at 541-346-7244 [SAFE], or the non-confidential Title IX Coordinator at 541-346-8136. From the SAFE website, students may also connect to Callisto, a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at [respect.uoregon.edu](http://respect.uoregon.edu) (<https://titleix.uoregon.edu/respect.uoregon.edu>) or [aaeo.uoregon.edu](http://aaeo.uoregon.edu) (<https://aaeo.uoregon.edu/>) or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216 for help. As UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at [Discrimination & Harassment](http://aaeo.uoregon.edu/content/discrimination-harassment) (<http://aaeo.uoregon.edu/content/discrimination-harassment>).

### *Reporting*

The instructors of this class are Student-Directed Employees. As such, **if you disclose to us, we will respond to you with respect and kindness. We will listen to you, and will be sensitive to your needs and desires. We will not judge you. We will support you.** As part of that support, we will direct students who disclose sexual harassment or sexual violence to resources that can help. **We will only report the information shared to the university administration when you as the student requests that the information be reported** (unless someone is in imminent risk of serious harm or is a minor).