Course Syllabus

Jump to Today ✎ Edit

BI 213 General Biology III: Populations

Syllabus for Fall 2020

Instructor: Dr. Peter Wetherwax

Remote Version of Bi213

This course will be conducted remotely for the entire term. I have designed it so that it is synchronous, which means there are specific times (lecture and labs listed in the schedule of classes) when there will be live engagement with your teachers and fellow students.

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 behavioral ecology with an emphasis on social animals like honey bees, 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 change 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

Weekly Topics

The course will be divided into 9 weekly topics that consist of 4 major areas of evolution and 5 major areas of ecology (see schedule below). The materials for each topic will be presented in a variety of ways including: videos and slides embedded within Canvas quizzes that are due before our synchronous lectures, and live presentations with break-out groups during the scheduled lectures and labs. Weekly materials will generally be made available on Canvas by the preceding Friday or Saturday.

Weekly Activities (Canvas "quizzes"): Independent, During Lectures and During Labs

There will be several graded activities each week that will be presented within Canvas quizzes. Activities will have due dates during the week but you will always have advance notice of when they are due. Everyone is expected to attend lectures and labs in order to contribute to our community of learners. We will complete Canvas quizzes in break out groups during both lectures and labs. If you miss a lecture, you can complete the quiz on your own that day, but this is not a good substitute for attending the actual lecture. Lectures slides will be posted but the actual lectures will not be recorded so students feel free to participate, and because much of the lecture will be conducted in small break-out

groups. Lab activities need to be completed during the your lab time. We will allow students to attend another lab on a very limited basis and with prior authorization from your lab instructor. The due dates and times are indicated on each activity. No late work will be accepted so please be sure to start the activities well before their due dates/times.

On four Fridays there will be an online exam. The exams will be taken during the scheduled lecture time (60 minutes). For students allotted more time from the AEC office, we will allow that additional time for completion of the exams and final exam.

Problem Sets (not graded)

There will be practice problem sets that will be posted on Canvas for each topic. The solutions will be posted after each topic is completed. It is very important that you work on these during each week. We will help you to understand how to solve these problems via Slack and online office hours (using Zoom). There will be questions on the exams based on the practice problem questions.

Exams and Final Exam

There will be 4 exams during the term (about every two weeks) and a final exam. All exams will be the same format: multiple choice or short answer taken on Canvas. The 4 exams will be on the material from the preceding 2 or 3 weeks (not cumulative). The final will be cumulative.

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". We 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 exams. While the 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. You will be able to go back and work on previous questions during the exam. 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 exams or final exams given. Everyone is required to take the final on Friday December 11th at 10:15 AM PDT.**

Evaluation

Component	**Total Percentage**
Lecture and Lab activities embedded in Canvas quizzes. There will be several of these each week and the percentage for each activity will vary. Some will be due before lectures, other will be completed during the lecture and lab times.	50%
4 Friday Exams (see schedule)	20%
Final Exam (Friday, December 11th, 10:15-12:15 PDT)	30%

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.

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*** The text, *Biological Science,* 5^{th} or 6^{th} edition (4^{th} ok, but not recommended—you will be responsible for determining the appropriate reading by comparing to a later version on reserve) by Scott Freeman, should be used as a general reference. You are responsible for all of the assigned readings and this material will show up on quizzes and exams. If you don't want to buy your own textbook, you can use the scanned pages we will post each week that have been provided by the library and taken from their reserve materials.

- ***Online activities*** Some activities will require you to use modeling simulations available via web browsers; all will be freely available and we will send out links with instructions.

Schedule with Links to Weekly Pages

Major Area	Week	Date	Lecture Topic	Laboratory
Mechanisms of Evolution	1	9/30 10/2	Introduction and Natural Selection I Natural Selection II	Natural Selection of Medium Ground Finch
	2	10/5 10/7 10/9	Population Genetics I Population Genetics II Population Genetics III	Cat Genotyping and Population Genetics
	3	10/12 10/14 10/16	Forces of Evolution I Forces of Evolution II **Exam #1 Weeks 1-3**	Review for exam #1
Phylogenetics	4	10/19 10/21 10/23	Phylogenetics I: Species Concepts Phylogentics II Phylogentics III	Building Phylogenetic Trees
Behavioral Ecology	5	10/26 10/28 10/30	Behavioral Ecology I Behavioral Ecology II **Exam #2 Weeks 4 & 5**	Honey Bee Behavior
Population Ecology	6	11/2 11/4 11/6	Population Ecology Exponential Growth I Limits to Population Growth I	Exponential Growth Modeling
	7	11/9 11/11 11/13	Limits to Population Growth II Limits to Population Growth III **Exam #3 Weeks 6 & 7**	Review for Exam #3
Community Ecology	8	11/16 11/18 11/20	Community ecology Species Interactions I Species Interactions II	Measuring Species Diversity
	9	11/23- 11/27	no scheduled classes this week to give students time to travel home for Thanksgiving etc.	
	10	11/30 12/2 12/4	Successiion and Disturbance Successiion and Disturbance **Exam #4 Weeks 8 & 10**	Review for Exam #4

Final Exam Week	12/11	**Final Exam on Friday 10:15 -12:15 on entire course**

How to Communicate with Faculty, GEs and Undergraduate Teaching Assistants

- ***Synchronous Lectures*** *Lectures will be held on Mondays, Wednesdays and Fridays from 11am-12pm. We will work through the material and assignments for that day, often working on specific questions in smaller break-out rooms. There will be pre-lecture Canvas quizzes for many of the lectures. It is important that you have watched the pre-lectures prior to coming to these sessions (they will be due before the start of the lecture).*
- ***Synchronous Labs*** *Labs are on Wednesdays and Thursdays. We expect students to attend their own section. Check your Duckweb schedule as you are expected to attend the lab section in which you are enrolled. If you need to attend a different lab section, you need to get prior approval from your GE lab instructor but this should only be for special circumstances. We will work through the material and assignments for that day, often working on specific questions in smaller break-out rooms.*
- ***Zoom etiquette:*** *Our expectations for zoom are really no different than what we'd expect in the classroom. Be on time for class, wait your turn to talk and keep you discussions on topic! This translates to Zoom in the following way:*
  - Mute your microphone if you aren't talking
  - Please use your video. Just like it's 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*** *We have created a Bi213 Slack channel for this term. 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/bi213f2020/shared_invite/zt-gzf7q3xz-3Z4wZN1tHVUl0gD~NYg1aQ*** *(https://join.slack.com/t/bi213f2020/shared_invite/zt-gzf7q3xz-3Z4wZN1tHVUl0gD~NYg1aQ) to join this channel (it will only allow you to sign up with your uoregon email address). We will have weekly channels during the term for questions related to that week's materials.*
- ***Email*** For more personal questions, and anything that is confidential (e.g., your grades), 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.uo)** . 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/). 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** (https://titleix.uoregon.edu/respect.uoregon.edu) or **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).

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). Please note the difference between 'privacy' and 'confidentiality.' As a Student-Directed Employee we can offer privacy because we are not required to report certain information to the university. However, we cannot be bound by confidentiality in the same way that a counselor or attorney is. Confidential resources such as these means that information shared is protected by federal and state laws. Any information that we as student-directed employees receive may still be accessed by university or court proceedings. This means, for example, that we could still be called as a witness or required to turn over any related documents or notes that we keep.

Please note also that we are required to report all other forms of prohibited discrimination or harassment to the university administration. Specific details about confidentiality of information and reporting obligations of employees can be found at **titleix.uoregon.edu** (https://titleix.uoregon.edu/).

Mandatory Reporting of Child Abuse

UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. Child abuse pertains to individuals who are under the age of 18. This statement is to advise you that your disclosure of information about child abuse to the instructor may trigger my duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting: **Mandatory Reporting of Child Abuse and Neglect** (https://hr).

Course Summary:

Date	Details	
Wed Sep 30, 2020	**Module 1: Natural Selection "Lecture"** (https://canvas.uoregon.edu/courses/162702/assignments/946096)	due by 12pm