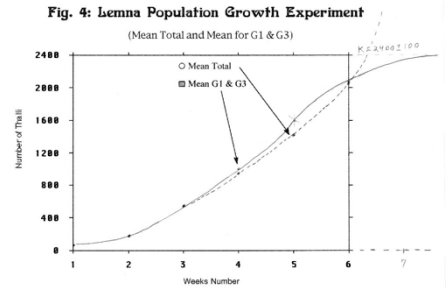


# BI 213 GENERAL BIOLOGY III: POPULATIONS

## Syllabus for Spring 2022

CRN: 31826

Instructors: Dr. Tobias Policha & Dr. Laurel Pfeifer-Meister  
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**Office Hours and Tutor Sessions will be posted to Canvas.**

**Overview->Goals->Materials->Format->Policies->Resources->COVID->Schedule->Readings**

### 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. We end the term by examining how energy flows and nutrient cycle in ecosystems, how we have altered these functions, and consider the consequences of these changes for global biodiversity. Students participate in a field trip to collect data on plant diversity in a local forest which is used as the basis of understanding evolution of land plants, succession and diversity.

### COURSE GOALS

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, quantitative reasoning, and the development of communication skills.

#### 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 understand the connections between some of the major events in the history of life 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. To describe how matter and energy flows through ecosystems and understand some of the major fluxes and stores in biogeochemical cycles.
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.
4. To learn to communicate knowledge, ideas and reasoning clearly and effectively in oral and written forms appropriate to the biological sciences; to prepare an oral presentation and practice public speaking.
5. To become familiar with the use of science relevant search engines, and learn to identify primary work; to develop the ability to think critically about information, evaluate the validity of arguments, and weigh the merits of disparate scientific conclusions.
6. To experience the collaborative nature of the biological sciences.

## **COURSE MATERIALS**

### **Textbook(s)**

The textbook that we will use is "**Biological Science**" by **Scott Freeman et.al.** You can use the older 5<sup>th</sup> (978-0321841810) or 6<sup>th</sup> (978-0321976499) editions, or the newest 7<sup>th</sup> (978-0134678320) edition for **this course**. If you want to save money, then we suggest you buy a used copy of the 5th edition. The readings include background material useful for preparing you for lecture and for studying for exams. We don't expect you to necessarily remember all the details in the text. A good strategy would be to skim over the entire chapter first, concentrating on the major concepts. Read the headings, bolded font, and understand the figures first, then read more carefully the specific pages that are assigned. **There are copies of the textbook on reserve in the Science Library.**

**Two optional books** that you may want to purchase include: '**Braiding Sweetgrass**' by **Dr. Robin Wall Kimmerer** (978-1571313560) which is the Common Reading book for the University of Oregon this year. We will read one chapter together that will be posted to Canvas; and '**The Beak of the Finch**' by **Jonathan Weiner** (978-0679733379) which is a good, and accessible narrative of the work done by Peter and Rosemary Grant, and their students, on evolution in the Galapagos finches.

### **Course Packet**

There is a required course packet that you can buy at the UO Bookstore, it includes lecture and lab handouts. We will provide a copy of first lecture handout, but you will need to get your packet ASAP.

### **Calculator**

You will need a scientific calculator capable of doing natural logarithms and square roots for use on problem sets, in lab, and on exams. Calculators that have the ability to store text will not be allowed. Cell phone calculator-apps cannot be used during exams.

### iClickers

Please purchase an iClicker for this course. **We will use clickers the first day of class.** You will need to register your clicker ID number on our Canvas site.

## COURSE FORMAT

### Lectures (Mondays, Wednesdays and Fridays, 9:00-9:50 in 282 Lillis)

You should do the assigned readings before coming to the lectures. During most of the lectures there will be activities that will help you to learn concepts; these will often be done collaboratively with students discussing the problem together for a few minutes before independently writing your own solution. You will not turn these in but your active participation will help you understand the material and prepare you for exams.

### Lab (Wednesdays and Thursdays in 5 Klamath)

We consider the labs to be an integral part of the course. We have tried to design active learning experiences that will broaden your understanding of what ecology and evolution are about. Often you will be working in groups, posing questions, designing experiments or making observations, and presenting your findings in written or oral form. There will be labs dealing with natural selection, population genetics, plant biodiversity, phylogenetics, behavior and population growth. Lab handouts will usually be turned in at the end of each lab, but are due at the beginning of your next lab. Part of the grade will be based on participation in lab. **Most labs cannot be made up because they involve special material or equipment.** Late lab reports will not be accepted. To accommodate any public health related absences, we will drop your lowest lab score. In addition to the lab reports, **pre-lab assignments** are designed to motivate you to read and think about the lab exercise for that week. These will generally become available on Fridays and due Wednesday at 8:50 am prior to lab each week. No pre-labs will be dropped. **Pre-labs and labs begin Week 1!**

### Clickers (Personal Response Systems)

Clickers will be used in almost every class to encourage participation and to provide valuable feedback to instructors and students. Each student is expected to purchase a clicker for use in this class. You should register your clicker on the course Canvas site. Questions during lecture that require clickers will be multiple choice. Points will be earned through both participation and based on the correct answer (when appropriate). The total points for the clicker portion of your grade will be based on 85% of the total possible points: your clicker grade = total points earned/85% of total possible (not to exceed 100%). This essentially equates to missing a week and a half of clicker questions with no penalty.

### Issues Project

You will investigate an issue in ecology or evolution and give a group **oral presentation** in lab during week 9 or 10. Projects will consist of a thesis statement, rough and final draft of an **annotated bibliography**, a peer review, and a Google slide done by each person individually. The bibliography will be accepted up to a week late but discounted by 10% for each day (or fraction thereof) that it is late. **There will be no late presentations.** See issues project handout on Canvas for more details.

*If you are retaking this course, you will NOT be allowed to resubmit issues project work from the previous time you took Bi213. **The work you do this term must be original and on a different topic.***

### Post-Lecture Quizzes

These will be short Canvas quizzes corresponding to the lecture and reading material for each session. The quizzes will be posted on Canvas right after most lectures. **All quizzes are due by 8:50 AM on their**

**due dates** (typically the morning before the next lecture). Solutions will be made available in the afternoon. We will drop your lowest score.

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

There will be several practice problem sets that will be posted on Canvas during the term. It is very important that you work on these during each week. We will help you to understand how to solve these problems in the help sessions and office hours. The practice problems are very similar to the types of questions you will see on the exams (in fact, many of the problems are from past exams!). The practice problems are designed to help you master the material needed to do well on the exams.

### **Field Trip**

Each student will take a field trip with the class to the Mohawk Resource Natural Area to practice field survey methods and learn some local natural history, while investigating ecological succession. The material covered on the trip is an integral part of the course. If you cannot attend the trip, you will be given an alternative assignment (see handout on Canvas). The field trip will be run on Wednesday, Thursday, Friday, and Saturday of Week Six (5/4-7). You will only go on one of those days, but it will take four days to cycle through all of the students. We will ask for your preferred date(s) early in the term. Please try to make yourself as available as possible during that week. There will not be regular labs during that week.

### **iNaturalist Observations**

As a way to get you out and observing nature on your own, you will be responsible for making and posting fifteen observations to the iNaturalist citizen science platform. You will need to make an (free) account at <https://www.inaturalist.org/>, and you will need access to a digital camera (phones ok). Further details will be available in the Assignments section of Canvas.

### **Discussion Posts**

As a way to encourage interaction outside the classroom you will be required to post to Discussion Forums at a few points during the term. Sometimes this will be relatively personal, like introductions, mid-term feedback on the course, or a final reflection. Other weeks it will be more aligned with various assignments. **You will be required to respond to someone else's post for all Discussions.**

### **Exams**

There will be three exams: two midterms and a final. All exams will be the same format: short-answer with occasional multiple choice or true/false questions. The final is cumulative. The exams will cover material from all aspects of the course including lectures, labs, the field trip, quizzes, readings and practice problems. 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. Exams cannot be made up. Exams are graded by the GEs under the supervision of the faculty. To promote consistency, a single GE grades each question. **There will be no early or late midterms or final exams given. Everyone is required to take the final on Monday June 6th at 10:15 AM.**

To accommodate potential conflicts we will assess your exam grade in the method that results in the highest score for you: **Version 1:** each midterm will count towards 100 points and the final will count towards 150 points; **Version 2:** your highest midterm will count towards 150 points and the final will count towards 200 points.

**Midterm regrade policy** If you wish to submit a midterm for a regrade, you must use the following guidelines. First, refer to the exam key available on Canvas to see how closely your answer(s) match the key. If you still wish to have a midterm exam answer regraded, **you must submit a written statement**

**within one week of the return of the exam, along with your original exam, explaining specifically why your answer merits a higher score.** We will regrade the entire exam, and a regrade may result in a higher, lower, or unchanged score. We reserve the right to eliminate this option at our discretion.

### **COURSE ASSESSMENTS**

<b>Assessment</b>	<b>Number</b>	<b>points each</b>	<b>Total</b>
Midterm Exams	2	100	200
Final Exam	1	150	150
Lecture Quizzes	(26-1) = 25	5	125
Lab Reports	(7-1) = 6	20	120
Bibliography	1	120	120
Presentation	1	80	80
Pre-lab quizzes	7	10	70
iNaturalist	15	3	45
Field Trip	1	40	40
iClickers	tbd	tbd	30
Discussion Posts	4	5	20
		<b>TOTAL</b>	<b>1000</b>

#### **Posting of Grades**

Scores for assignments and exams will be posted on Canvas. Check your scores every time we post them, as you will have only one week after the posting to notify us of mistakes. Final grades will follow typical >90%=A, >80%=B, >70%=C, >60%=D cutoffs with '+/-'s assigned within ~2% of each cutoff.

### **COURSE POLICIES**

#### **Course Context (COVID-19 + everything else!)**

In ecology and evolution, one of the things that you will come to appreciate is that **context matters**. For example, plants will respond differently to herbivory when they are drought-stressed, or elk will change their browsing habits in the presence of predators. Mutations are either adaptive or deleterious depending on the environment. We want to acknowledge that we are all experiencing things outside the bounds of normalcy right now and that each of us are being stressed in ways that we have not entirely anticipated nor fully appreciate. This impacts our learning communities as much as any other aspect of our lives.

We urge us all to remember that we did not sign up for this. Not for the pandemic, not for the climate chaos, not for the systemic injustice, not for the unpredictability. We will get through this though, by prioritizing each other as human beings, by prioritizing simple solutions that work for the most people, and by sharing resources and communicating clearly. We must remain flexible and adjust to the situation as needed. **Everyone needs support and understanding** in this unprecedented moment.

We want you to know that **we stand in firm solidarity with those that are continuing to demand social justice and an end to war**. We realize that the events of the last two years are impacting each of you in unique ways, some of which may be difficult for others to understand. We want to encourage inclusivity and understanding around the unique issues faced by our black students and other students of color.

In light of everything, we want you to know that we are open to working with you on a range of accommodations to help you feel successful in our upcoming class. Please **contact us early with any anticipated issues**, it will be easier to help you if it does not become a last-minute emergency.

We intend to facilitate a learning experience that will be of value to you in a post-pandemic world. We truly believe that the awareness and the skills that we will develop together this term will go a long way toward **promoting a more sustainable and resilient world**, whatever the future holds.

*"If there's any good to come of it, I'm trying to think of it as a reminder that despite our illusions of human exceptionalism, natural processes are still in charge, and (of) the importance of our collective responsibilities toward one another."*

- Robin Wall Kimmerer on the COVID-19 pandemic

### **Professional Conduct**

We will work hard to make this course valuable to your learning. We welcome suggestions from you at any time about things you think could be done to improve the course. In return, we ask that you arrive to lab and lecture on time and stay until class is over without making unnecessary noise that could distract your classmates. Please put away and do not use your own computers, cell phones, or other electronic devices during lecture or lab. We promise to respect you as students and as individuals, and ask that you return that respect to us and to your fellow classmates. Class rosters are provided to the instructor with the student's legal name. We will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter (or before) so that I may address you properly.

### **Academic Integrity**

All students are expected to complete assignments in a manner consistent with academic integrity. Students must produce their own work and properly acknowledge and document all sources. Students can find more complete information about the University of Oregon's Policy on Academic Dishonesty in the [student conduct code](https://dos.uoregon.edu/conduct) (located at [dos.uoregon.edu/conduct](https://dos.uoregon.edu/conduct)).

### **Inclusiveness**

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. Our classroom is a learning environment, and as such should be a safe, inclusive and respectful place. Being respectful includes using preferred pronouns for your classmates. Disrespecting fellow students as well as combative approaches, tones and/or actions are not acceptable. Please make us aware if there are classroom dynamics that impede your (or someone else's) full engagement.

### **Communication**

In general, our class will communicate through our Canvas site. Announcements and emails are archived there and automatically forwarded to your UO email, and can even reach you by text. Check and adjust your settings under Account > Notifications. We will have a running Discussion forum on our Canvas site called "Question Board" for the entire group to ask and answer questions.

As a team-taught course, we have split responsibilities down lecture/lab lines. If you have questions related to lectures (including exams) please contact Dr. Policha, if you have questions about labs (including the field trip) please contact Dr. Pfeifer-Meister and/or the relevant Graduate Employee lab section instructor.

We will make ourselves as available as possible for questions related to course material. However, we ask that you make an honest effort to find the answers yourself, including posing questions to fellow students first (you can do this through Canvas). If it pertains to course administration, double-check the

syllabus and Canvas. If you email after regular business hours you may not hear back from us until the next day. Please include "BI 213" in the subject line of all emails.

### **Prohibited Discrimination and Harassment**

UO is committed to providing an environment free of all forms of prohibited discrimination and harassment, including sex or gender based violence. As instructors, one of our responsibilities is to help create a safe learning environment for my students and for the campus as a whole. Students experiencing any form of prohibited discrimination or harassment may seek further information on [safe.uoregon.edu](https://safe.uoregon.edu), [respect.uoregon.edu](https://respect.uoregon.edu), [titleix.uoregon.edu](https://titleix.uoregon.edu), or [aaeo.uoregon.edu](https://aaeo.uoregon.edu) or contact the Title IX office (541-346-8136), Office of Civil Rights Compliance office (541-346-3123), or Dean of Students offices (541-346-3216), or call the 24-7 hotline 541-346-SAFE for help.

### **Crises Happen**

If you are having difficulties that are interfering with your ability to do well in the class, please tell an instructor as soon as possible. We may be able to refer you to someone for help or to make special arrangements if the need is real and you have done your best to deal with the situation in a timely manner. There is a Crisis Center on campus that you should not hesitate to call if you, or a friend, are in need of assistance. Their phone number is 346-4488.

### **Reporting**

The instructors of this class are '*Assisting 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 prohibited discrimination and harassment, including sexual harassment or violence, to resources that can help and will only report the information shared to the university administration if the student requests that the information be reported (unless someone is in imminent risk of serious harm or a minor). ***Please note the difference between 'privacy' and 'confidentiality.'*** As an Assisting 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 assisting 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.

For information about our reporting obligations as an employee, please see the **Employee Responsibilities** on the Office of Investigations and Civil Rights Compliance (OICRC) website. Students experiencing sex or gender-based discrimination, harassment or violence should call the 24-7 hotline 541-346-SAFE [7244] or visit [safe.uoregon.edu](https://safe.uoregon.edu) for help. Students experiencing all forms of prohibited discrimination or harassment may contact the Dean of Students Office at 541-346-3216 or the non-confidential Title IX Coordinator/OICRC at 541-346-3123. Additional resources are available at [investigations.uoregon.edu/how-get-support](https://investigations.uoregon.edu/how-get-support).

### **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 link for detailed information about mandatory reporting: <https://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect>

## **CAMPUS RESOURCES**

### **Class Encore**

Class Encore sets up small, structured study groups for challenging classes. Groups meet once a week for 50 minutes, **weeks 2-10**, and are **FREE** and open to **ALL** students enrolled in the class. Class Encore sessions give students the opportunity to: ask questions, discuss course concepts, practice study strategies, collaborate to solve problems, groups are led by students who previously excelled in the class and maintain a high GPA. They attend the class, participate in weekly planning sessions, and lead the study groups in reviewing course concepts and study strategies. **Registration opens Wednesday March 30<sup>th</sup> at 9am (<https://engage.uoregon.edu/class-encore>). Tuesdays: 1 pm, 2 pm & 3 pm. and Wednesdays at 3 pm.**

### **Tutoring and Academic Engagement Center**

Drop-in math and writing support in addition to tutoring, and study skills support. Located in the 4<sup>th</sup> Floor Knight Library (541) 346-3226, [engage@uoregon.edu](mailto:engage@uoregon.edu). <https://engage.uoregon.edu/services/>

### **Accessible Education Center (AEC)**

The University of Oregon is working to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your participation, please notify us as soon as possible. You are also encouraged to contact the Accessible Education Center if you are not a student with a documented disability, but you would like for us to know about class issues that will impact your ability to learn, contact us so that we can strategize how you can get the most out of this course. They are available Monday-Friday 8am-5pm by calling (541) 346-1155 or emailing [uoaec@uoregon.edu](mailto:uoaec@uoregon.edu). <https://aec.uoregon.edu/>

### **UO Access Shuttle**

The UO Access Shuttle is an on-campus ride service provided at no cost to students with conditions that limit mobility. More information and a sign-up form can be found on the parking & transportation department website: <https://parking.uoregon.edu/content/access-shuttle>.

### **Center for Multicultural Academic Excellence (CMAE)**

Promoting student retention and persistence for historically underrepresented and underserved populations. Programs and services that support retention, academic excellence, and success at the UO and beyond. Committed to all students, including undocumented and tuition equity students. Email [cmae@uoregon.edu](mailto:cmae@uoregon.edu). or call the front desk at 541-346-3479.

### **Counseling Center**

The Counseling Center provides students with confidential consultation 24 hours a day, 7 days a week. Their number is 346-3227. Students often believe that their issues are not “severe” enough for them to call, but at the Counseling Center, no problem is too small. <https://counseling.uoregon.edu/>.

If you’re unable or don’t wish to come to the Counseling Center in person, help is still available. Our after-hours support/crisis line is open to all students, wherever you are located. Call 541-346-3227 when the Counseling Center is closed to speak to a therapist. Counseling Center staff can help you figure out how to find mental health services in your area. Call 541-346-3227 during business hours to schedule a consultation with a case manager.

### **Dean of Students**

The Dean of Students website has additional resources targeted to specific communities on campus.



Check out <https://dos.uoregon.edu/community> for information on the Black Cultural Center, LGBT+ Support Services, the Women's Center, as well as resources for Nontraditional students and Veterans.

### **Duck Rides (formerly 'Safe Rides')**

Duck Rides is a student-led organization dedicated to providing free and accessible transportation to all university students, staff and faculty. The goal is to provide safe transportation that is an alternative to walking home alone at night, and to prevent sexual assault and driving under the influence. Hours of Operation: 6:00 pm – 12:00 am. 7-days-a-week. 541-346-7433. [duckrides@uoregon.edu](mailto:duckrides@uoregon.edu). <https://duckrides.uoregon.edu/>

## **COVID PROTOCOLS**

We want to let you know that while for healthy, vaccinated people, the pandemic feels like it is normalizing, some of your instructional staff live with vulnerable individuals, including children too young to be vaccinated. **The pandemic does not feel over to these people.**

### **Academic Disruption**

In the event of a campus emergency that disrupts academic activities, course requirements, deadlines, and grading percentages are subject to change. Information about changes in this course will be communicated as soon as possible by email, and on Canvas. If we are not able to meet face-to-face, students should immediately log onto Canvas and read any announcements and/or access alternative assignments. Students are also expected to continue coursework as outlined in this syllabus or other instructions on Canvas. ***In the event that the instructor of this course has to quarantine, this course may be taught online during that time.***

### **Staying Safe in Classes**

As the University of Oregon continues in-person instruction, instructors and students play a key role in keeping our community healthy and safe.

- **Prevention:** To prevent or reduce the spread of COVID-19 in classrooms and on campus, all students and employees must:
  - Comply with [vaccination policy](#)
  - [Wash hands](#) frequently
  - Complete daily [self-checks](#)
  - Stay home/do not come to campus if feeling [symptomatic](#).
  - Individuals with no symptoms or mild symptoms can get tested at McArthur Court through UO's Monitoring and Assessment Program. Masks are required at COVID-19 testing sites including in line outside.
  - Visit the [Exposure Scenario](#) page if you test positive or have been in close contact with a confirmed or presumptive case.
  
- **Support:** The following resources are available to you as a student.
  - [University Health Services](#) or call (541) 346-2770
  - [University Counseling Center](#) or call (541) 346-3277 or (541) 346-3227 (after hrs.)
  - [MAP Covid-19 Testing](#)
  - [Corona Corps](#) or call (541) 346-2292

- Academic Advising or call (541) 346-3211
- Dean of Students or call (541)-346-3216

### COURSE SCHEDULE

Week	Date	Lecture Topic	LABS (W or R)
1	3/28	Natural Selection I	Population Genetics I
	3/30	Population Genetics I	
	4/1	Natural Selection II	
2	4/4	Population Genetics II	Population Genetics II & Issues Project Intro <b>Artificial Selection (AS) 1:</b> Survey Trichomes of P <sub>o</sub>
	4/6	Species Concepts	
	4/8	Speciation and Isolating Mechanisms	
3	4/11	Phylogenetics I	Plant Phylogenetics; Issues Thesis Statement <b>DUE</b>  <b>AS2:</b> Pollinate Hairiest P <sub>o</sub>
	4/13	Phylogenetics II	
	4/15	Evolutionary Trends in Plants ( <i>end of material for Midterm I</i> )	
4	4/18	Behavioral Ecology I	Honey Bee Behavior;  Draft Bibliography <b>DUE</b>
	4/20	Behavioral Ecology II	
	4/22	<b>MIDTERM EXAM I</b>	
5	4/25	Population Ecology: Introduction	Plant Diversity & Field Trip Planning; Peer Review <b>DUE</b>
	4/27	Population Ecology: Exponential Growth	
	4/29	Population Ecology: Logistic Growth	
6	5/2	Population Ecology: Life Histories	<b>NO LAB (Field Trip)</b>  Final Draft Bibliography <b>DUE</b>
	5/4	Community Ecology: Species Interactions	
	5/6	<b>No lecture on account of field trip</b>	
	5/4-7	<b>FIELD TRIP (Wed, Thu, Fri, Sat)</b>	
7	5/9	Community Ecology: Structure & Dynamics	Population Growth  <b>AS 3:</b> Harvest and Plant F <sub>1</sub> Seeds
	5/11	Community Ecology: Consumption	
	5/13	Community Ecology: Competition ( <i>end of material for Midterm II</i> )	
8	5/16	Community Ecology: Mutualism	Presentation Planning;  One Slide <b>DUE</b>
	5/18	Community Ecology: Succession	
	5/20	<b>MIDTERM EXAM II</b>	
9	5/23	Ecosystem Ecology: Productivity	Project Presentations <b>AS 4:</b> Survey trichomes of F <sub>1</sub> Presentation <b>DUE</b>
	5/25	Ecosystem Ecology: Energy Flow	
	5/27	Ecosystem Ecology: Nutrients	
10	5/30	<b>MEMORIAL DAY (NO SCHOOL)</b>	Project Presentations  <b>AS5:</b> Data Analysis
	6/1	Biodiversity	
	6/3	Conservation Biology	
Finals Week	6/6	<b>FINAL EXAM 10:15 AM</b>	

***“Nothing in biology makes sense except in the light of evolution.”***

- Theodosius Dobzhansky 1973

***“Nothing in evolutionary biology makes sense except in the light of ecology.”***

- Peter and Rosemary Grant 2008

# READINGS

Read Chapter	Reviews tool	7th	edition	6th	edition	5th	edition	Topics
Week	Lecture	Theme	Ch. pages	Ch. pages	Ch. pages	Ch. pages	Ch. pages	Topics
1	1	Natural Selection I	22 448-458	22 435-446	25 444-454			Evolution and natural selection
1	1	Natural Selection I	BS17 55-56	BS17 52-53	BS15 B:28			misconceptions
1	1	Natural Selection I	BS18 56-57	BS18 53-54	BS16 B:29-B:30			study success
1	2	Pop Gen I	23 469-478, 482-490	23 456-465, 469-477	26 465-474, 478-486			population genetics, forces of evolution
1	3	Natural Selection II	22 461-466	22 448-453	25 456-462			Darwin's finches
1	3	Natural Selection II	BS2 23-26	BS2 21-24	BS3 B:4-B:6			reading graphs
2	4	Pop Gen II	27 556-557	27 540-541	30 554-555			sickle-cell anemia & malaria
2	5	Species concepts	24 493-507	24 480-493	27 489-502			species concepts and speciation
2	6	Speciation	25 521-522	25 507-508	28 516-517			adaptive radiations
2	6							
3	7	Phylogenetics I	25 510-517	25 496-503	28 505-511			phylogenetics
3	8	Phylogenetics II	BS13 50-51	BS13 47-48	BS7 B:10-B:11			reading a phylogenetic tree
3	9	Evolution of Plants	28 577-603	28 561-587	31 577-599, 601-609			evolution of land plants
3	9	Evolution of Plants	27 562-564	27 546-548	30 559-565			origin of eukaryotes
4	10	Behavior I	50 1076-1079, 1086-1088	50 1051-1054, 1061-1064	53 1082-1085, 1091-1095			behavioral ecology & communication
4	11	Behavior II	50 1089-1092	50 1064-1067	53 1095-1098			altruism & sociobiology
4	11	Behavior II	BS4 p. 29	BS4 26-27	BS5 B:8			working with probabilities
4	11	Behavior II						
5	12	Intro to Ecology	49 1054-1064	49 1029-1039	52 1059-1067			levels of ecology, biotic & abiotic
5	12	Intro to Ecology	51 1095-1098	51 1070-1072	54 1101-1103			distribution & abundance
5	12	Intro to Ecology						
5	13	Exponential Growth	51 1103-1105	51 1076-1079	54 1107-1108, 1110-1111			population growth models
5	14	Logistic Growth	51 1106-1107	51 1079-1080	54 1108-1112			regulation of population growth
5	14	Logistic Growth	51 1112-1114	51 1084-1086	54 1115-1118			human population growth
5	14	Logistic Growth	BSS 29-30	BSS p. 27	BS6 B:9			using logarithms
6	15	Life Histories	51 1098-1103	51 1072-1076	54 1103-1107			demography & life history
6	16	Communities	52 1117-1118	52 1092-1093	55 1123-1125			species interactions
7	17	Succession	52 1131-1136	52 1105-1110	55 1135-1137, 1138-1142			succession
7	18	Consumption	51 1108-1110	51 1081-1083	54 1113-1115			population cycles/predation
7	18	Consumption	52 1122-1125	52 1098-1101	55 1128-1133			consumption
7	19	Competition	52 1118-1122	52 1094-1097	55 1125-1128			competition / niche
8	20	Mutualism	52 1125-1127	52 1101-1103	55 1133-1135			mutualisms
8	21	Community Structure	52 1128-1131	52 1103-1105, 1111	55 1137-1138, 1143, 1153			diversity, keystones, trophic cascades

Read Chapter Reviews too!		7th	edition		6th	edition		5th	edition		Topics
Week	Lecture	Ch.	pages	Ch.	pages	Ch.	pages	Ch.	pages		
9	22	Productivity	53	1141-1143, 1147-1148	53	1116-1118, 1121-1122	56	1148-1150, 1153-1156	56	1148-1150, 1153-1156	productivity
9	22	Productivity	49	1064-1073	49	1039-1048	52	1068-1079	52	1068-1079	biomes
9	23	Energy Flow	53	1143-1146	53	1118-1120	56	1150-1153	56	1150-1153	energy transfer, biomagnification
9	24	Nutrients	53	1149-1155	53	1123-1129	56	1156-1162	56	1156-1162	biogeochemical cycles
10	25	Biodiversity	54	1165-1170, 1177-1181	54	1139-1145, 1152-1156	57	1172-1177, 1184-1189	57	1172-1177, 1184-1189	biodiversity & its importance
10	25	Biodiversity	52	1136-1138	52	1111-1113	55	1142-1145	55	1142-1145	patterns in biodiversity
10	25	Biodiversity	54	1170-1177	54	1145-1151	57	1178-1184	57	1178-1184	threats to biodiversity
10	26	Conservation	53	1159-1162	53	1133-1136	56	1166-1169	56	1166-1169	effects of climate change
10	26	Conservation	25	525-527	25	511-513	28	520-23	28	520-23	mass extinctions
10	26	Conservation	54	1181-1185	54	1156-1159	57	1189-1193	57	1189-1193	preserving biodiversity
10	26	Conservation	Worldwatch Institute 2002: The plight of birds								
10	26	Conservation	IPCC AR6 Headline Statements 2021: State of the Climate								