

**Biology 359
Plant Biology
Winter 2022**

Instructor: Matt Streisfeld

Office: 267A Onyx Bridge
Phone: 541-346-4816
email: mstreis@uoregon.edu

Office hours: Mon: 12:00 – 1:00, Wed: 1:00-2:00,
(or by appointment – in person or Zoom)

GE: Mandie Driskill

email: mdriskil@uoregon.edu
Office hours: Friday 2:00-3:00
Office hours: Huestis 116

Meeting Times and Locations:

Lecture: M/W 8:30-9:50 GER 302

Discussion: Fri: 9:00-9:50
Fri: 10:00-10:50
Huestis 112

Course Description: Plants play an integral, yet often overlooked role for the health of our environment, the global economy, and our ability to live on earth. Plants fix carbon and provide oxygen to the atmosphere; plants are a critical piece to the food chain; and plants are amazingly diverse. Moreover, because of their sessile nature, plants are intimately connected to changes in their environment; much more so than animals. Therefore, a comprehensive understanding of the biology of plants and how they respond to changes in their environments is critical for any undergraduate biology major. The main goal of this course will be to provide you with an overview of the unique biology of plants. The topics we will cover include the ecology, physiology, developmental genetics, and evolutionary biology of land plants, focusing primarily on the angiosperms (or flowering plants). I plan to integrate these areas to provide you with a detailed view of how land plants overcome many of the challenges they experience on a daily basis. By the end of the term, you should have an appreciation for why biologists study plants and how they do it.

Learning Outcomes:

- Provide a broad-based knowledge of physiology, development, ecology, and evolution of land plants
- Evaluate the unique aspects of the biology of plants relative to animals
- Analyze and interpret quantitative datasets from the primary literature
- Develop verbal and written communication skills through in-class discussion and assignments

Lectures: My lectures will be posted on Canvas prior to class time. Attendance in lecture is ideal for your success in this course, but if you are feeling ill, it is more important that you stay home (see COVID-19 policies and procedures below). I will attempt to record lectures or make previously recorded versions available if you need them, but all of this depends on technology availability in the classroom.

Readings: To supplement my lectures, you will have reading assignments on each topic that we cover. Readings are optional, as you will be responsible only for material covered in lecture. However, the readings are a great way to supplement the materials covered in lecture, and they provide an additional opportunity for you to learn the materials covered in class. Because there is no one book that includes all of these topics, I have chosen appropriate chapters from different sources. These are available as pdf for download on Canvas.

Discussion: You will each attend a 50-minute discussion section per week that will be run by your GE (beginning Friday of Week 1). During this period, you will have an opportunity to work on problems related to the previous week's lectures. This provides a great opportunity to become more comfortable with the types of questions you will likely see on the exams. Your GE will hand out a problem set that you will work on in groups during the section. At the end of each period, you will then have an opportunity to convene as a class and discuss your answers to these problems. Your GE will moderate these discussions. Peer learning activities such as these have been shown to greatly enhance comprehension of scientific material, and they will hopefully help to improve your grade in this

class. There will be no discussion sections in week 5. All questions and answers will be posted to Canvas to use for studying.

Assessment: There will be two homework assignments, a midterm, and a comprehensive final examination. All assignments will be administered via Canvas (no in-person exams). You will have 1 week to complete each homework assignment. The midterm and final will be timed, but you are able to take the exam at any time during the day that it is assigned. You will have 90 minutes for the midterm, and 120 minutes for the final. I will adjust times to support students with accommodations through the Accessible Education Center. I have designed all assignments with the expectation that you will have access to course materials and the Internet when you take them. I will be looking to see evidence of critical thinking and your ability to put the concepts we are working on into action in response to the exam prompts. You are expected to turn in your own work for homeworks and exams. If a technological glitch disrupts your exam, don't panic. Take a photo to document the error message you're receiving, and then email or call me.

The final exam will focus more heavily on the material covered after the midterm, but it still will be cumulative. Exams will consist of problems, short answer questions, and true/false style questions to test your conceptual understanding of the material.

Practice Problems: My exam questions often require you to synthesize material from multiple lectures – this is the best way to test your conceptual understanding of the material. To ensure that you have adequate practice with these types of questions, I will present practice questions at the end of some lectures that you can work on outside of class. I will go over the answer to the question(s) at the beginning of the following lecture. In addition, I will distribute practice questions prior to each exam that you will have time to work through on your own and with your peers. As discussed above, the discussion sections will be dedicated to practice problems as well as to answering other questions that you have. Finally, I will hold review sessions as needed.

Evaluation: Your final grade will be determined as follows:

<u>Assignment</u>	<u>% of your Final Grade</u>
Homework 1	20/25
Homework 2	20/25
Midterm	25/30
Final Exam	25/30

Whichever homework you score better on is worth 25%; the other one is worth 20% of your grade. Whichever exam you score higher on will be worth 30%; the other one is worth 25%.

In order to receive a passing grade (P or C-), your final percentage in the class must be 68% or greater.

Academic Integrity: I have a zero tolerance policy for cheating, plagiarism, and any other form of academic dishonesty. For this course, that means your assignments must be your work. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. The [University Student Conduct Code](#) defines academic misconduct as using unauthorized help on assignments and examinations and the use of sources without acknowledgment, and recording class without “the express written permission of the instructor(s).” Academic misconduct is prohibited at UO. I will report misconduct to the Office of Student Conduct and Community Standards—consequences can include failure of this course. I will ask you to certify that your exams/papers are your own work.

Accessibility: 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 disability-related barriers to your participation, please contact me. You are also encouraged to contact the Accessible Education Center in 164 Oregon Hall at 541-346-1155 or uoaec@uoregon.edu. The AEC offers a wide range of support services, including note-taking, testing services, sign language interpretation, and adaptive technology.

COVID-19 Policies and Procedures

Communication: All communications from me to the entire class will be via Canvas announcements that will be sent to your uoregon email. If I have reason to contact you directly, that will be done via your uoregon.edu email address. If you need to reach me, the best way to do so is to email me at: mstreis@uoregon.edu. You are welcome to try to call my office, but I likely will only be on campus on Monday and Wednesday, so I may be slower at responding via phone.

Classroom policies: Masks must be worn at all times in the classroom, and at all times inside buildings at UO. Therefore, eating and drinking in classrooms is not currently allowed at UO. I ask that class members step outside when they need to eat or drink, take medication, or anything else that necessitates taking off masks. Please feel free to do this whenever you need to—there is no need to ask permission for this. Students who may have mobility issues that make this guidance challenging should contact me. In addition, being back in person may feel more challenging for some of us, for a variety of reasons. If you need to step outside of the room momentarily to take care of your own physical or mental needs, please feel warmly welcome to do so.

Absences: As the university community continues to balance learning and health during the COVID-19 pandemic, **it is essential that you regularly perform [symptom self-checks](#) and not attend class when ill or when you or someone you live with must quarantine.** I know that it is not an easy decision to miss class because it might impact your grade and it is difficult to make up missed material. I have designed this course so that your health comes first. I will help you make up any missed information. It is more important that you stay home if you feel sick than to come to class and put others at risk. While I highly recommend that you attend lecture and discussion when you are able, there will be no impact on your grade if you are unable to attend. However, I do ask that you communicate with me if there are issues that will make you miss multiple classes. To help you make up any missed classes, I will:

- Post my lecture slides on Canvas (they will be available prior to each day's lecture)
- Make supplemental reading assignments available
- Post practice questions and answers from discussion sections each week
- Attempt to record lectures and make them available (pending technology in the classroom)
- Make myself available for office hours (or other appointments via Zoom, if preferable)

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 announcements through Canvas. If we are not able to meet face-to-face, students should immediately log onto Canvas and read any announcements. Students are also expected to continue coursework as outlined in this syllabus or other instructions on Canvas. In the event that I have to quarantine, this course may be taught online during that time.

COVID Containment Plan for Classes: As the University of Oregon returns to in-person instruction, the key to keeping our community healthy and safe involves **prevention, containment, and support.** Here is information critical to how the UO is responding to COVID-19.

- **Prevention:** To prevent or reduce the spread of COVID-19 in classrooms and on campus, all students and employees:
 - Must comply with [vaccination policy](#)
 - Must [wear face coverings](#) in all indoor spaces on UO campus
 - Complete weekly [testing](#) if not fully vaccinated or exempted
 - [Wash hands](#) frequently and practice social distancing when possible
 - Complete daily [self-checks](#)
 - Stay home/do not come to campus if feeling [symptomatic](#)

- Complete the UO [COVID-19 case and contact reporting form](#) if you test positive or have been in close contact with a confirmed or presumptive case.
- **Containment:** If a student in class tests positive for COVID-19, all relevant classes will be notified via an email by the Corona Corps Care Team with instructions for students and staff based on their vaccination status. Specifically:
 - *Vaccinated/Asymptomatic students:* Quarantine not required, but daily self-monitoring before coming on campus advised; sign up for testing 3-5 days after notification through [MAP](#)
 - *Unvaccinated or partially vaccinated students:* 14-day quarantine advised – do not come to class – and sign up for testing 3-5 days after notification through [MAP](#), if asymptomatic, or through University Health Services (541-346-2770) or your primary care provider, if symptomatic.
 - *Symptomatic students:* stay home (do not come to class/campus), complete the online [case and contact form](#), and contact University Health Services (541-346-2770) or your primary care provide to arrange for immediate COVID-19 testing.

Students identified as close contacts of a positive case will be contacted by the Corona Corps Care Team (541-346-2292).

- **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

Good Classroom Citizenship

- Wear your mask and make sure it fits you well
- Stay home if you're sick
- Get to know your neighbors in class, and let them know if you test positive
- Get tested regularly
- Watch for signs and symptoms with the daily symptom self-check
- Wash your hands frequently or use hand sanitizer
- Complete the UO COVID-19 [case and contact reporting form](#) if you test positive or are a close contact of someone who tests positive.

Your well-being: Life at college can be very complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you're facing such challenges, you don't need to handle them on your own--there's help and support on campus. As your instructor, if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the details of what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do—for yourself and those you care about.

[University Health Services](#) help students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates.

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and confidential. Find out more at counseling.uoregon.edu or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).

Date	Lecture Topic	Readings (paper for discussion section in parentheses)
3-Jan (M)	Course introduction; Why study plants? Major lineages of plants I	Plant lineages 1
5-Jan (W)	Major lineages of plants II; Review of plant structure and growth	Plant Lineages 2 Plant structure and growth
10-Jan (M)	Physiological ecology I: Light	Photosynthesis and light
12-Jan (W)	Physiological ecology II: Water	Water relations
17-Jan (M)	<i>No Class – MLK Day</i>	----
19-Jan (W)	Life history strategies Homework 1 available on Canvas	Life history
24-Jan (M)	Ecological genetics I	Ecological genetics Herbivory
26-Jan (W)	Ecological genetics II + Herbivory Homework 1 Due by 10:00pm PST	----
31-Jan (M)	Conclusions and Review	
2-Feb (W)	Midterm (on Canvas) (No discussion section this week)	---
7-Feb (M)	Introduction to angiosperm reproduction and floral biology	Floral biology
9-Feb (W)	Intro to plant developmental genetics	Developmental genetics
14-Feb (M)	Transition to reproduction: Flowering time pathways I	Flowering time
16-Feb (W)	Transition to reproduction: flowering time II	Flower development
21-Feb (M)	Floral development	---
23-Feb (W)	Conclusion and review Homework 2 available on Canvas	
28-Feb (M)	Mating Systems I: Sex or no sex	Mating_systems1
2-Mar (W)	Mating systems II: Self-fertilization or outcrossing Homework 2 Due by 10:00pm PST	Mating_systems2
7-Mar (M)	Mating systems III: Self-incompatibility	
9-Mar (W)	Speciation, polyploidy, pollination (miscellaneous day)	
14-Mar (M) Final's Week	Final Exam (on Canvas)	---

