

**Biology 359
Plant Biology
Summer 2023**

Instructor: Matt Streisfeld
email: mstreis@uoregon.edu

Meeting Times and Locations:

Aug 21 – Sept 15, 2023

Remote online course – no official times (see below)

Office Hours via Zoom: Th 9:00–10:00am PDT

Zoom office hours information:

Link: <https://uoregon.zoom.us/j/93626580945?pwd=RzJ3L3U5YjFuZjRGZVVFcERNUExnUT09>

Meeting id: 936 2658 0945

Password: 974965

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 broad 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 discussion and assignments

A note about online instruction: My goal is to provide an inclusive learning environment that includes recorded lectures, supplemental readings, and practice questions, while trying to not sacrifice content. I would like to stress that communication and transparency are critical during online instruction, so please be sure to alert me if there are any issues that you need assistance with. Finally, it is critical that you stay up to date with the material, and if you run into any problems, please do not wait to let me know!

Office hours and communication: I will hold weekly office hours for anyone who needs extra help, if you would like to go over practice questions (see below), or if you would like more in-depth connections with the material. I will make regular announcements via Canvas, so please be sure to check your [uoregon.edu](mailto:mstreis@uoregon.edu) email address. If you need anything or have additional questions, please send me an email at: mstreis@uoregon.edu. I will reply to your message as soon as possible, but generally within 24 hours. There may be a few times when I am not available; in these cases, I will be sure to let you know via messages to Canvas.

Lectures and practice questions: My lectures use Powerpoint, are recorded using Panopto, and are uploaded to Canvas. You will find links to the lecture videos here:

<https://docs.google.com/spreadsheets/d/1EVaWqlQyQLb12jtfe5vN3ZMNvtmSK-uLIWijKWfZYg0/edit?usp=sharing>

A link is also available on Canvas.

I will post the slides on Canvas, so you have copies of them for your studying. **I would like to stress that you will be assessed entirely based on the material in my lectures.** Therefore, it is imperative that you stay up to date with lecture videos, and that you ask any questions you have. My general suggestion is that you watch one lecture every day (Monday to Thursday) each of the four weeks. That will allow you to stay up to date and ready for the assignments (see below).

I will post a series of practice questions along with each lecture to see how you are comprehending the material. This is a great opportunity to see how well you are preparing for the class. These will be mostly short answer questions. While my exams will be mostly multiple choice, if you are able to answer these short answer questions accurately, you should be well prepared for the exams. It is recommended that you try to answer the questions on your own before looking at my answer keys. If you have questions, please email or attend office hours.

Please note that my lectures were recorded at a time when I did not expect to teach again remotely. Therefore, there may be mentions of dates when things are due and/or things that refer to a situation from a previous time. Please ignore this. **All information on due dates, etc. is posted in this syllabus and on Canvas. Refer only to these dates and not what you may hear in the videos.**

Readings: To supplement my lectures, I have included reading assignments on many of the topics that we cover. These are meant to assist you with the material discussed in lecture. **You are responsible only for the material covered in lecture and not anything extra covered in the readings that I do not discuss in my recorded lectures.** However, I recommend doing the readings, especially if there is material in the lectures that is unclear to you. Because there is no one book that includes all of these topics, I have chosen appropriate chapters from different sources. These are available on Canvas for download.

Assessment: There will be one midterm (end of week 2) and a comprehensive final examination (end of week 4). Exams will consist of problems and multiple choice questions to test your conceptual understanding and breadth of knowledge of the material. In addition, there will be two homework problem sets (weeks 1 and 3) to provide you with additional practice leading up to the exams. All assignments will be available and completed on Canvas. See below for specific dates on when the exams will be held and when assignments will be posted to Canvas. The two exams (week 2 and 4) will be available to you all day, **but you will have 90 minutes to complete the midterm and 120 minutes to complete the final once you begin (unless you require extra accommodations via AEC).**

Assignment	Lectures covered	Available on Canvas (PDT)	Must be completed by (PDT)
Homework 1	1-4	Aug-24 by 5pm	Aug-28 by 11:59pm
Midterm	1-5	Sept-1 by 12am	Sept 1 by 11:59pm
Homework 2	6-10	Sept-5 by 5pm	Sept-11 by 11:59pm
Final exam	1-11	Sept-15 by 12am	Sept-15 by 11:59pm

Evaluation: Your final grade will be determined as follows:

<u>Assignment</u>	<u>% of your Final Grade</u>
Homework 1 / 2	15/20
Midterm / Final	25/30
Turn in your homework on time	10

Whichever homework assignment you score better on will count 20% (lower grade = 15%).

Whichever exam you score better on will count 30% (lower grade = 25%).

** Please note that you must calculate your total percentage in the class manually. The total presented in Canvas **DOES NOT** weight your scores the way I will do it. There is no way to specify this grading scheme in Canvas. **

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

Date	Lecture Topic	Readings
Lecture 1	Course introduction; Why study plants? Major lineages of plants Review of plant structure and growth	(01) Plant lineages 1 Plant Lineages 2 Plant structure and growth
Lecture 2	Physiological ecology I: Light	(02) Photosynthesis and light
Lecture 3	Physiological ecology II: Water	(03) Water relations
Lecture 4	Life history strategies Homework 1 covers through Lecture 4	(04) Life history
Lecture 5	Ecological genetics Herbivory Midterm covers through Lecture 5	(05) Ecological genetics Herbivory
Lecture 6	Angiosperm reproduction	(06) Floral biology Developmental genetics
Lecture 7	Intro to plant developmental genetics	
Lectures 8-9	Transition to reproduction: flowering time pathways	(07) Flowering time
Lecture 10	Transition to reproduction: flowering time III and floral development Homework 2 covers Lectures 6-10	(08) Flower development
Lecture 11	Mating Systems: selfing vs outcrossing; self-incompatibility Final covers Lectures 1-11	(09) Mating_systems1 Mating_systems2

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>. 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.") I have a zero tolerance policy for academic dishonesty. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. For the purposes of this course, all exam and homework answers that are submitted via Canvas should be the student's own work.

Accessible Education Center: The University of Oregon is working to create inclusive learning environments. The instructor believes strongly in creating 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, we encourage you to come visit during office hours so that we can strategize how you can get the most out of this course. Located on the 1st Floor of Oregon Hall (541) 346-1155, uoaec@uoregon.edu

Students with Disabilities: The University of Oregon and I work to create inclusive learning environments. Please notify me during the first week of the term if there are aspects of the instruction or design of this course that result in barriers to your participation. You may also wish to contact Disability Services in 164 Oregon Hall at 346-1155 or disabsrv@uoregon.edu.