Biology 359
Plant Biology
Summer 2019

Instructor: Matt Streisfeld
Office: 267A Onyx Bridge
Office hours: Any day after class, or by appointment
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Meeting Times and Locations:
Mon - Thurs 10:00-12:20 KLA 5

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 and Discussion: My lectures will be posted on Canvas prior to class time. I would like to stress that attendance in lecture is essential for your success in this course. It also will count toward your grade. We will also spend time breaking out into groups to discuss the material and to answer questions that I hand out in class.

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

Assessment: There will be one midterm (after week 2) and a comprehensive final examination (last day of class). Exams will consist of problems and short answer questions to test your conceptual understanding of the material. In addition, there will be two homework problem sets (weeks 1 and 3) to provide you with practice leading up to the exams.

Evaluation: Your final grade will be determined as follows:

Assignment	% of your Final Grade
Homework 1 / 2	15/20
Midterm / Final	25/30
Attendance	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%).

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.

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.

Date	Lecture Topic	Readings
19-Aug	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
20-Aug	Physiological ecology I: Light	(02) Photosynthesis and light
21-Aug	Physiological ecology II: Water **Post Homework 1 on Canvas**	(03) Water relations
22-Aug	Life history strategies	(04) Life history
23-Aug	**Homework 1 Due by 4pm Onyx 267A**	
26-Aug	Ecological genetics Herbivory **Midterm 1 covers through this material**	(05) Ecological genetics Herbivory
27-Aug	Introduction to angiosperm reproduction and floral biology; Intro to plant developmental genetics	(06) Floral biology Developmental genetics
28-Aug	Intro to plant developmental genetics: continued Review	
29-Aug	**Midterm**	
2-Sept	*No Class - Labor Day*	
3-Sept	Transition to reproduction: flowering time pathways I	(07) Flowering time
4-Sept	Transition to reproduction: Flowering time pathways II **Post Homework 2 on Canvas**	
5-Sept	Transition to reproduction: flowering time III and floral development	(08) Flower development
6-Sept	**Homework 2 Due by 4pm Onyx 267A**	
9-Sept	Mating Systems: sexual vs asexual reproduction; selfing vs outcrossing	(09) Mating_systems1
10-Sept	Mating systems: self incompatibility	(10) Mating_systems2
11-Sept	Conclusions and Review	
12-Sept	**Final**	