

Biology 355: Plant Ecology

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Office/Lab: CBB 302A (inside Biology Dept main office)
Office Hours: Wed 1-3 or by appointment

Lecture: Tue/Thur 12:30 – 1:45 in TNR 461
Lab: Thur 2:00 – 4:50 in TNR 461



Required Texts: *The Ecology of Plants*, 3rd ed., Gurevitch *et al.* 2021; Additional materials on Canvas

Course Description: Biology 355 is an advanced course in organismal, population, community, and ecosystem ecology with a primary focus on plants.

Course Learning Outcomes: After taking this course, students will be able to:

- 1) Use knowledge of ecological and evolutionary processes to describe and explore patterns in nature, specifically as they apply to plants and the interactions they have with their biotic and abiotic environments.
- 2) Use observations and both empirical and theoretical tools to conceptualize and explore relevant questions of interest within the scientific field of plant ecology.
- 3) Articulate a reasonable understanding of the history of plant ecology as a scientific discipline and identify some of its most outstanding contributors and studies, both past and present.
- 4) Critically evaluate literature and communicate information effectively as dictated by norms within the scientific field of plant ecology.

Exams: This course includes three exams total: two midterms and a final. Exams will generally contain a mixture of question types (e.g., short answer/short essay, fill-in-the-blank, quantitative, labeling/drawing figures or diagrams, and multiple-choice questions). Exam content will focus on lecture material; however, lab activities and supplemental reading/video assignments compliment lecture material and will probably serve as inspiration for exam questions. Midterm exams will occur during two lab periods in TNR 461. The final exam is cumulative though it will be weighted toward material covered during the last third of the semester (i.e., after midterm II). The final exam is also worth a bit more than the midterms.

Supplemental readings and quizzes: I will ask that you read and interpret a number of articles (mostly from the primary literature) this semester. We will discuss these during our meetings; therefore, you must have access to this material in class. With that in mind, I encourage you to bring a tablet/laptop to class on those days. Hard copies of reading material will also work. If those options are problematic for you, please let me know. Most reading assignments will be accompanied by a short quiz, which will be administered promptly at the start of class on the associated day. Quizzes are not meant to be difficult; they are simply meant to provide an incentive for you to complete the reading assignments before coming to class.

Lab: We will meet some (but not all) weeks for lab. Some weeks you will be working on your own. Some of our labs will occur outdoors or in the TNR greenhouse; please dress appropriately.

Attendance: I do not take attendance in lecture. However, this is a small class and I do notice who is there and who is missing. Regularly missing and/or being late to lecture will negatively influence your participation score. Also, based on my experience teaching this course I can assure you that students who regularly attend and participate in lecture do significantly better than students who habitually skip and/or are late. Do not fool yourself into thinking that your textbook and access to my lecture slides are meaningful substitutes for attending lecture. They are not.

On-time attendance in lab is mandatory and I will take attendance at the beginning of each lab meeting. Each of our meetings is worth up to 10 points for attendance (not including midterm exam meetings and weeks in which you are working independently). Students arriving late to lab lose one attendance point per minute (up to a 10 point maximum for that day). Please be there on time. If you miss lab it is your responsibility to obtain notes/information/data from a classmate.

Participation: This is an upper-division course on a fairly specialized topic. I assume you are here because you are sincerely interested in plant ecology. I expect you to come to class prepared, to act professionally, and to be an active participant in our meetings and activities. The course will be more enjoyable for everyone if you do your best to engage with me, your peers, and course material to the maximum extent possible. A finite number of points are allocated to participation. You must earn these points! Students who are quiet, unengaged, and/or generally appear uninterested in our activities will not fare well in this regard.

Extra credit: I do not offer extra credit in response to student requests. However, on occasion I might offer a small amount of extra credit, usually for attending relevant seminars held on campus or in the community. If/when these opportunities occur I will announce them in class and via email.

Grading: The total number of points possible in this course is 375. Point values for individual exams, quizzes, assignments, etc. are listed below. Values with an asterisk (*) refer to assignments that, if not completed, will result in the associated loss of points and a reduction of your letter grade to the next lowest full grade (i.e., B+ to a C+).

Activity	# Points Possible
Midterm exams (2)	40 each
Final exam	60
Quizzes (7)	5 each
<i>Solidago</i> project assignment	30*
Independent project assignment	30*
Independent project presentation	20*
Modeling project assignment	30*
Attendance in lab	10 each meeting
Participation	30



Your final grade in this course will be based on the percentage of all possible points that you earn throughout the semester. To determine your final grade the following metric will be used:

≥	90-	87-	84-	80-	77-	74-	70-	67-	60-	≤
94%	93%	89%	86%	83%	79%	76%	73%	69%	66%	59%
A	A-	B+	B	B-	C+	C	C-	D+	D	F

Turning in assignments after their due dates and make-up policy for missed quizzes and exams:

Assignments are due on their respective due dates. Assignments turned in after their due date lose 20% of their value per day. Make-ups for missed exams and quizzes are given only in truly extraordinary situations. Timely communication with me about your situation is important.

Students with disabilities: I will be happy to help you if you need special accommodations to succeed in this course. Please visit the UWSP Student Disability and Assistive Technology Center to document your needs and then contact me so that appropriate arrangements can be made.

Academic integrity: It is your responsibility to be aware of your rights and responsibilities as a UWSP student. Please take the time to read and understand the information found here, and let me know of any questions: <https://www.uwsp.edu/dos/Documents/UWS%2014-1.pdf>. Also, be sure to review the following information on plagiarism: <https://libraryguides.uwsp.edu/plagiarism>

Course schedule: Note that I reserve the right to alter this schedule, with due notice, as we progress through the semester. Lab meetings occur on dates in bold.

Date	Topic	Assignments and due dates
9/2	Course Introduction	
9/7	Review of plant anatomy/physiology/taxonomy	
9/9	Quiz I (Hartnett and Abrahamson 1979) Review of plant anatomy/physiology/taxonomy <i>Lab: Solidago project (introduction; meet at SW corner of Lake Joanis in Schmeeckle Reserve)</i>	Read Hartnett and Abrahamson 1979 before lecture. <i>Solidago project assignment assigned.</i>
9/14	Plant mating systems and reproductive ecology	
9/16	Plant mating systems and reproductive ecology <i>Lab: no formal meeting (work on Solidago project)</i>	
9/21	Quiz II (Barringer 2007; Barringer and Geber 2008) Plant mating systems and reproductive ecology	Read Barringer 2007 and Barringer and Geber 2008 before lecture.
9/23	Plant mating systems and reproductive ecology <i>Lab: Independent project (introduction)</i>	Independent project assignment assigned. Independent project presentation assignment assigned.
9/28	Plant life-history ecology	
9/30	Plant life-history ecology <i>Lab: no formal meeting (work on independent project)</i>	
10/5	Plant life-history ecology	
10/7	Plant life-history ecology <i>Lab: share and discuss ongoing work on projects</i>	
10/12	Plant life-history ecology	
10/14	No lecture meeting <i>Lab: midterm exam I</i>	<i>Solidago project assignment due.</i>
10/19	Plant population ecology	
10/21	Plant population ecology <i>Lab: Modeling project (introduction)</i>	Modeling project assignment assigned.
10/26	Plant population ecology	
10/28	Plant population ecology <i>Lab: tour of TNR greenhouse and discussion of research</i>	
11/2	Plant community ecology	
11/4	Plant community ecology <i>Lab: work on projects</i>	
11/9	Plant community ecology	
11/11	Quiz III (Janzen and Martin 1982) Plant community ecology <i>Lab: work on projects</i>	Read Janzen and Martin 1982 before lecture.
11/16	Large-scale plant ecology	
11/18	No lecture meeting <i>Lab: midterm exam II</i>	Modeling project assignment due.
11/23	No class	
11/25	No class	
11/30	Quiz IV (Colautti and Barrett 2013?) Special topic: invasive species? <i>Lab: no formal meeting (work on projects)</i>	Read Colautti and Barrett 2013(?) before lecture.
12/2	Quiz V (Rader et al. 2016?) Special topic: bees and other pollinators? <i>Lab: Independent projects presentations</i>	Read Rader et al. 2016 (?) before lecture. Independent project assignment due.

12/7	Quiz VI (Chapter 21 in textbook?) Special topic: climate and climate change?	Read Chapter 21 in your textbook (?) before lecture.
12/9	Quiz VII (Flinn 2015?) Special topic: balance of nature? <i>Lab: no formal meeting</i>	Read Flinn 2015 (?) before lecture.
12/13	Final Exam (2:45 PM in TNR 461)	



In the end we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught.

---Baba Dioum