

Biology 355: Plant Ecology

Instructor: Dr. Brian C. Barringer
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Office: TNR 337
Office Hours: Tue/Wed 9:00 – 11:00 or by appointment

Lecture: Tue/Thur 12:30 – 1:45 in Sci A208
Lab: Thur 2:00 – 4:50 in TNR 461

Required Texts: *The Ecology of Plants*, 2nd ed., Gurevitch *et al.* 2006
Additional reading will be provided for you on D2L

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 evolutionary and ecological 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 readings generally 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. The final exam will occur in our regular lecture classroom (Sci A208) on Tue, Dec 19th from 8:00 – 10:00 AM.

Quizzes: I will ask that you read a number of items (mostly peer-reviewed journal articles) this semester, and we will discuss these items during our meetings. Most reading assignments will be accompanied by a short quiz, which will be administered promptly at the start of class on the associated day (see course schedule, below). Quizzes are not meant to be difficult; they are simply meant to provide an incentive for students to complete the reading assignments before coming to class.

Lab: We will meet for lab each week throughout the semester. Always bring a small notebook and something to write with to lab. Some of our labs will occur outdoors or in the greenhouse; please dress appropriately. A number of assignments are associated with lab (see course schedule, below).

Attendance: I do not formally 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 1 attendance point per minute (up to a 10 point maximum).

Participation: This is an upper-division course on a complex topic. I assume you are here because you are sincerely interested in plant ecology. I expect you to act professionally and be an active participant in all of 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 480. Point values (and due dates, if relevant) 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	Due date
Midterm exams (2)	50 each	
Final exam	60	
Quizzes (12)	5 each	
Statistics prelab assignment	10	10/12 before lab
<i>Solidago</i> project report	30*	10/26
Modeling assignment	20	11/16
<i>Acer</i> project report	30*	11/30
Plant ecology presentation	30*	
Plant ecology presentation powerpoint file	10	12/7
<i>Clarkia</i> project report	30*	12/14
Attendance (7 lab meetings)	10 each	
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

Make-up and late policy: Make-ups for missed exams are given only in truly extraordinary situations. However, if you have a university-sanctioned event or have an emergent medical situation, death in the family, etc., you can take a make-up. In order to qualify for a make-up, you must provide a written, verifiable excuse from an authorized person (coach, medical doctor, minister, etc.) within 72 hours of the missed exam. This excuse should clearly articulate that you were unable to make it to class on the day you missed. I reserve the right to verify the legitimacy of all excuses by contacting the authority figure.

Assignments are due on their respective due dates. Assignments turned in late lose 20% of their value per day. Assignments turned in more than five days late will be critiqued and returned but will receive no credit.

Students with disabilities: I am happy to help you if you need special accommodations to succeed in this course. Please visit the UWSP Student Disability and Assistive Technology Center (located in LRC 609) to document your needs and then contact me so that appropriate arrangements can be made. More information can be found here: <http://www.uwsp.edu/disability/Pages/default.aspx>

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: <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf> Also, be sure to review the following information on plagiarism: <http://library.uwsp.edu/guides/vrd/plagiarism.htm>

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
9/5	Introduction	
9/7	Quiz I Pattern and process in nature <i>Lab: Clarkia project introduction (start seeds)</i>	Read Kunin 1997 before lecture. <i>Clarkia</i> project report assigned.
9/12	Review of plant anatomy, physiology, and taxonomy	
9/14	Review of plant anatomy, physiology, and taxonomy <i>Lab: Clarkia project (set up experiment)</i>	
9/19	Plant mating systems and reproduction	
9/21	Plant mating systems and reproduction <i>Lab: Quiz II and Solidago project introduction (meet at SW corner of Lake Joanis in Schmeeckle Reserve)</i>	Read Hartnett and Abrahamson 1979 before lab. <i>Solidago</i> project report assigned.
9/26	Plant mating systems and reproduction	
9/28	Quiz III Plant mating systems and reproduction <i>Lab: no formal meeting (work on projects)</i>	Read Barringer and Geber 2008 before lecture.
10/3	Plant life-history ecology	
10/5	Plant life-history ecology <i>Lab: midterm exam I</i>	
10/10	Plant life-history ecology	
10/12	Plant life-history ecology <i>Lab: Data analysis workshop</i>	Read statistics tutorial and upload statistics prelab assignment to dropbox before lab. Plant ecology presentation assignment assigned.
10/17	Plant life-history ecology	
10/19	Plant population ecology <i>Lab: Quiz IV and Acer project introduction</i>	Read Ordonez and Williams 2013 before lab. <i>Acer</i> project report assigned.
10/24	Plant population ecology	

10/26	Plant population ecology <i>Lab: no formal meeting (work on projects)</i>	<i>Solidago</i> project report due in dropbox.
10/31	Plant population ecology	
11/2	Plant community ecology <i>Lab: Quiz V and modeling project introduction</i>	Read Friedman and Rubin 2015 before lab. Modeling assignment assigned.
11/7	Plant community ecology	
11/9	Plant community ecology <i>Lab: no formal meeting (work on projects)</i>	
11/14	Quiz VI Plant community ecology	Read Janzen and Martin 1982 before lecture.
11/16	Large-scale plant ecology <i>Lab: midterm exam II</i>	Modeling assignment due in dropbox.
11/21	Large-scale plant ecology	
11/28	Quiz VII Special topic: invasive species	Read Colautti and Barrett 2013 before lecture.
11/30	Quiz VIII Special topic: bees and other pollinators <i>Lab: no formal meeting (work on projects)</i>	Read Rader et al. 2016 before lecture. <i>Acer</i> project report due in dropbox.
12/5	Quiz IX Special topic: climate and climate change	Read Chapter 21 in your textbook before lecture.
12/7	Quiz X Special topic: balance of nature <i>Lab: plant ecology presentations</i>	Read Flinn 2015 before lecture. Powerpoint file from presentation due in dropbox.
12/12	Quiz XI Special topic: to be determined by class	Read TBD before lecture.
12/14	Quiz XII Special topic: to be determined by class <i>Lab: no formal meeting (work on projects)</i>	Read TBD before lecture. <i>Clarkia</i> project report due in dropbox.
12/19	Final Exam 8:00 - 10:00 AM in Sci A208	