

Plant Ecology

BTNY 302

Instructors:	
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Lecture: M, F 10:30 to 11:20 in Lilly 1-425

Lab: F 1:30 to 3:20 in Lilly 1-425

This course is intended to help you

- understand ecological concepts regarding the occurrence and distribution of plant species
- develop insight into the application of basic ecological concepts to the conservation and management of plant species and populations
- gain experience in the design and analysis of experiments
- gain experience collecting and analyzing plant community data
- increase your communication skills by developing and presenting a poster

Course organization

The lectures are divided into four general sections: 1) resources and stress, 2) populations and community interactions (competition, herbivory, pollination, etc.), 3) diversity and change and 4) applied ecology.

All reading assignments unless otherwise noted are from Keddy, PA. 2017. 2nd Ed. **Plant Ecology, Origins, Processes, Consequences**. Cambridge University Press.

	Monday	Friday	General topic	Assigned reading
January 8,12	Introductions and course overview.	Cold tolerance	Resources & Stress	Larcher excerpt
January 15,19	MLK holiday - No class	Light & Photosynthesis	R&S	Pp. 66-76 Sage et al.
January 22, 26	Light & Photosynthesis	Belowground resources	R&S	Pp. 78-104
January 29, Feb. 2	Drought	Drought	R&S	Pp. 367-382
February 5,9	Exam I	Populations	Populations & Community Interactions	Chapter 9
February 12,16	Populations	Competition	P & CI	Chapter 4
February 19,23	Competition	Herbivory	P & CI	Chapter 6
Feb 26 / March 2	Herbivory	Positive interactions	P & CI	Chapter 7
March 5,9	Positive interactions	Exam II	P & CI	
March 12,16	SPRING BREAK - no class			
March 19,23	Gradients & community	Disturbance	Diversity & change	Pp. 412-440, 163-183
March 26, 30	Disturbance	Succession	D & C	Pp. 185-206, 322-337
April 2, 6	Diversity	Diversity	D & C	Chapter 12
April 9, 13	Diversity	Exam III	D & C	
April 16, 20	Conservation and management	Conservation and management	D & C	Chapter 13
April 23, 27	Invasive species	Invasive species	D & C	Pp. 252-255 assigned reading

The labs were designed to supplement and expand concepts examined during the lectures. Please note that the last four labs are field-based and will require us to travel short distances during the regularly scheduled lab period. Transportation will be provided. Please wear closed-toe shoes or boots and dress for the weather. You should expect to get a bit dirty so wear appropriate clothing.

Lab Schedule	
January 12	<i>No lab</i>
January 19	Photosynthetic pathways
January 26	Harvest competition experiment
February 2	NICHES, endangered plants in Indiana, start transplants
February 9	Harvest shade experiment
February 16	Poster review (draft due)
February 23	Population ecology
March 2	Student poster session (15 students present, 15 evaluate)
March 9	Student poster session (15 students, 15 evaluate)
March 16	SPRING BREAK - no class
March 23	Plant defenses
March 30	Desert community sampling - lab exercise
April 6	Spring ephemeral field trip
April 13	Spring ephemeral field trip
April 20	Transplant seedlings at NICHES
April 27	TBD

GRADING

The final course grade will be determined as follows:

Exam 1	100 pts
Exam 2	100 pts
Exam 3	100 pts
Final	100 pts
Quizzes (6, each worth 15 pts)	90 pts
Poster	
Draft	10 pts
Final version	30 pts
Presentation	10 pts
Peer evaluation	10 pts
Labs	
Photosynthesis	30 pts
Shade	30 pts
Competition	30 pts
Populations	30 pts
Desert community	30 pts
Plant defenses	30 pts

Spring ephemeral	60 pts
NICHES visit	10 pts
Total	800 pts

Course grades will be based on total points with the following scale: 95% or higher (A+), 90% – 94% (A), 85% to 89% (B+), 80% – 84% (B), 75% – 79% (C+), 70% – 74% (C), 65% –69% (D), 64% or lower (F). Grades will be assigned on a straight scale, not on a curve.

Extra credit

You can earn extra credit by participating in a voluntary study team. Each study team will consist of 4 to 6 students and will have a team leader who will organize the weekly meetings and take attendance. You can earn 10 points for regularly attending the meetings. To encourage you to help your teammates, you can earn 5 points for each exam (there are 4 exams including the final) for which your team averages at least an 85%. You can also earn 5 points if your team averages at least an 85% on the poster assignment. Cumulatively, you can earn up to 40 extra points. This is 5% of your total grade.

Each team will have a team leader. The team leader will take organize the weekly meetings, take attendance, and meet periodically with the course instructors. Each team leader will receive an additional 10 points.

POSTER

You will be assigned a plant species during the first lab meeting and asked to develop a poster for that species. We will go over the assignment in depth during the first lab meeting. The first draft of your poster is due and will be reviewed by the instructors on February 16th during the lab session. Poster sessions will be held during class on March 2nd and 9th. You will present your poster during one session and review your classmates's posters during the other session.

OTHER STUFF

Exams: If you are unable to take an exam on the scheduled date you must contact one of the instructors to arrange a make-up test as soon as possible.

Late policy: Assignments that are turned in late will have 1/5 of their points subtracted for each day late, starting at the time that the assignment is due.

Saturday and Sunday also count as late days. For example, if the assignment is due at 5 PM on Friday (submitted electronically) it will be late if sent at 5:01 PM, and 1/5 of the points will be subtracted! If sent after 5:01 PM the following day, another 1/5 of the points will be subtracted, etc.

Academic Integrity: Dishonesty of any kind (cheating on exams, submitting work that isn't yours, plagiarism, etc.) is not acceptable and will not be tolerated in this course. If you are caught, you will receive a zero for the assignment.

It is your responsibility to know what constitutes dishonesty and to avoid even the appearance of dishonesty in this course. The Office of the Dean of Students publishes a pamphlet entitled "Academic Integrity – A Guide for Students" at <http://www.purdue.edu/odos/osrr/academicintegritybrochure.php>. We will assume that you have read this document. You should also have read Purdue's Honor pledge at <https://www.purdue.edu/provost/teachinglearning/honor-pledge.html>.

Office hours: Dr. Gibson will have office hours from 2 to 4 pm on Thursdays at the Native American Educational and Cultural Center (NAECC) which is located at the corner of 5th and University. Dr. Gibson will answer email during regular work hours (8 am to 5 pm Monday to Friday) but only checks messages a few times each day so you shouldn't wait until a deadline is imminent before contacting him.

Electronic devices. You are free to use your laptop or tablet to take notes during class. YOUR PHONE SHOULD BE TURNED OFF AND STOWED DURING THE LECTURE AND LABS. POINTS WILL BE DEDUCTED FROM YOUR OVERALL GRADE IF YOU VIOLATE THIS POLICY.

CAPS Information: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.