

**Syllabus: Bio 355/555: Plant Ecology** (One section: Section 1 4.0)

Prereq: 305 OR CONS INSTR

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Office Hours: Tue 1:30-2:30; Wed 1:00-2:00; or **by appointment**

**Course Information**

**Lecture:** Monday/Wednesday/Friday 12:00-12:50, TNR room 461

**Lab:** Monday 1-3 :50 pm, TNR room 461

**Textbooks:**

Gurevitch, Scheiner & Fox 2002. *The ecology of plants*, 2<sup>nd</sup> edition (rental)

Pechenik 2007. *A short guide to writing about biology*, 6<sup>th</sup> edition (purchase)

\*\*Assorted discussion papers will be available on D2L

**Three main purposes of this class are:**

1. For you to gain a greater understanding of how scientists explore the world, in the context of plant population dynamics, species interactions, and communities.
2. For you to gain a current understanding of concepts in plant ecology.
3. For you to gain insights and tools that help you to communicate your understanding of plant ecology through writing.

**Description:**

Plant ecology is the scientific study of how plants interact with their physical and biological environment. In this course, we will cover some aspects of population ecology, species interaction ecology, plant adaptations, plant community ecology and some ecosystem ecology. I use classic examples and newer examples to illustrate the concepts in each sub-discipline. In this class, we focus on both concepts and methods in plant ecology. We will also explore how mathematical representations can offer insights about phenomena in nature. Thus, we will discuss experimental design, data collection, data analysis (including some statistics), and communicating results. A large part of this course, in and out of class, will be devoted to clearly communicating science in written and verbal forms. We will also discuss the primary literature (reports of actual scientific studies) in a discussion each Friday, in which we will choose one plant-ecology related article from a peer-reviewed scientific journal each week to discuss.

**Lecture and lab topics will include:**

1. **Population biology:** population growth models, life history, seed ecology: dormancy, dispersal
2. **Species interaction ecology:** mutualisms, pollination biology, predation/parasitism (herbivory), plant-fungal interactions, competition
3. **Community Ecology:** community structure, species diversity, succession
4. **Ecosystems & Human influences:** global climate change, conservation, restoration, invasions

## Course Goals

The main goal of this class (for me) is to help you understand some of the major ideas in ecology (using plants as study organisms), and how plant ecologists think. Because everyone learns differently, it is important for you to figure out what works best for you when learning this material. I will help you in any way I can. **The only real way to understand the material is to try to figure things out for yourself, then ask questions in class or attend office hours if you are still having trouble.** This means that students must take an active role in their own learning, both in and out of the classroom. **I will do whatever I can to help you along the way,** by presenting or explaining the material as needed, and by giving a variety of assignments, including reading, writing, and group activities, to help you to understand the material. I hope that you will finish the semester better able to survive in the world of science, and better able to formulate, write, and discuss your ideas. Try not to be afraid to try new things, or to try doing things that seem difficult – if you learn something from the experience, consider this success.

## Desire 2 Learn & Turnitin.com

This semester we will use Desire2Learn (D2L) as a clearinghouse for course information. You will be able to access your grades, handouts, and any messages from me on D2L. The website for D2L is: <https://uwsp.courses.wisconsin.edu/>. You probably also have a link in your portal, or “MyPoint” webpage under Academics. Simply go to the webpage and log on, using your campus login and password, and you will find a link to Biology 355. **Please check the D2L site often, in case I have left an important message or handout for you.**

### *What is Turnitin.com?*

Turnitin.com is a web-based service that compares submitted student text against a database of millions of previously published documents, including those on the public Internet, a proprietary collection of published articles, as well as every student paper ever submitted to Turnitin.com, including previously submitted UWSP papers. When similarities between student text and an existing document are found, Turnitin highlights those similarities in an annotated document, displaying both the student text and the original source(s). This is intended to be a learning tool for you—I want you to submit your two major Lab reports and your proposal to Turnitin before you turn it in to me, so you can find out ahead of time if there is anything you need to revise. Although I will be able to see your submitted report, **I will grade only the report I receive in class.**

Detection of similarities does NOT mean plagiarism has occurred, as the overlapping text might be properly referenced and cited. I have found plagiarized papers with as little as 6% overlap, and non-plagiarized papers with as much as 30% overlap – each paper is different, and is treated as a different case. Please note that turnitin.com does not detect all aspects of academic dishonesty. Also, please note my plagiarism policy below. I will provide more information on this topic as the semester progresses...

## Work You'll Need to Do

### **A. Problem Solving and In-Class Questions**

Sometimes, these will involve problems that I will give for homework, to be discussed in a future class. Other times, I will give problems to solve as part of the “lecture” portion of this class, during which you will engage in small-group discussion. Some days I may ask you to write the answer to a short problem; other times I may ask each group to solve a larger problem or engage in a case study. These assignments will relate to the assigned reading and will help you to synthesize lecture material. Sometimes you will be asked to provide written answers to 1-3 thought questions

based on assigned reading for that day and lectures from the previous week. These in-class questions will be open-notebook, but not open-text. At the end of the semester, your worst 1-2 of these question sets will be dropped (depending upon how many we do). There will be no in-class questions during the mid-term week.

## **B. Lab Reports**

Monday afternoon labs will include a mixture of field, laboratory, greenhouse & theoretical techniques. You will be turning in 2 lab reports during the semester (60 points each). You will all write the first laboratory as a full report, but you may choose which of the remaining three:

1. Community Ecology/Sampling (New Hope Pines)
2. Succession (Plainfield Lake)
3. Competition (greenhouse)

on which to write the other large report. Participation in ALL of the labs is mandatory, whether or not you are writing a report on that lab. **Those who are not writing a formal lab report must still hand in the major tables and figures (but not raw data), and an independently-written 1-2 paragraph summary of major results and interpretations (and implications) of those results, one week after we analyze data (10 points each).**

Although you will be working in teams to do the research, **ALL lab reports should be independently written.** You will need to write these in the standard scientific report format, with Introduction, Methods, Results & Discussion sections. We will discuss details on writing lab reports in a few weeks and I will make a handout available to guide you in the writing of scientific papers. You will need to turn in both an electronic copy (**submitted to Turnitin.com ahead of time, then emailed to me directly**) and a hard copy. **Before class on the day your first drafts are due, you will need to send an email to me with your file, and copy this email to the student who is reviewing your report.**

## **C. Reviewing Lab Reports**

Editing is an important part of communicating in science. We will spend class time on editing, during which I will provide some instruction on how to be a good reviewer/editor. Then, you will have two chances to write a review of a lab report written by one of your classmates. Those whose papers were reviewed will revise the paper and then hand in the original paper, the review, and the revised paper. I will be grading both the original paper, the review, and the revised paper. **Before class on the day your reviews are due, you will need to send an email to me with your file, and copy this email to the student whose report you have reviewed.**

## **D. Research Proposal**

During the semester, you will have one group written assignment, to develop a research project and write a proposal (like the introduction and methods section of a lab report), along with a budget and a statement detailing the importance of the work you propose. The project will either be inspired by field observations or by literature research, but must address some problem within the realm of plant ecology. You will present your work during the last lab of the semester (10 minutes each, with 5 minutes for questions), and vote in a panel discussion on which project (or projects) will be “funded”. Details will be forthcoming.

## **E. Friday Discussions**

Beginning in Week 2, we will have a class discussion in lieu of lecture on Fridays. Discussion will consist of two parts: 1) current & newsworthy events in ecology, and 2) student-led discussions on an article from the primary literature.

**1) Current Events:** For the first 15-20 minutes of each Friday class, we will discuss the past week's newsworthy events as they relate to plant ecology. Here is what you will need to do:

**Required (for discussion leaders):**

- a) Look for current articles relevant to plant ecology in the New York Times, Science News, the BBC, or NPR during the week (online—many articles are available free online). You must read and be ready to present/discuss these articles by Friday noon.
- b) Other classmates will have a chance to bring in their contributions as well (for which they can get extra credit; see Extra Credit section below).

**Extra Credit (for discussion participants):**

- a) If you are not presenting, look for articles relevant to plant ecology in the New York Times, Science News, the BBC, or NPR during the week (online—many articles are available free online). If you find a relevant article, you must send me the “alert” by the morning after the article appears.
- b) If the article is relevant, I will alert the rest of the class. If you are the first person to alert me to the article and if it is relevant, you will be awarded an extra credit point. NOTE: no more than 1 point per week and no more than 10 points total will be awarded to any one person.

**2) Primary Literature:** The remainder of class will be run by a team of 2-3 students. Once or twice during the semester each of you will be part of the team, and must prepare to lead the discussion. When you are not presenting, you are expected to participate in every discussion. To help you prepare for these discussions, please read the assigned paper and turn in the following by the beginning of that Friday's class:

- a. **If you are not presenting:** write one paragraph reflection paper on the article discussing a point that particularly interested you (and that convinces me you have read it). Do not paraphrase the Abstract, or summarize the article. I want to know that you are thinking deeply about concepts in each article. **THIS PARAGRAPH MUST BE TYPED AND MUST BE HANDED IN BY THE END OF THE DISCUSSION.**
- b. Prepare a list of (at least) five questions and/or discussion points from the article.

Also, be sure to read the “Discussion Tips” handout in D2L.

## **F. Exams**

There will be two exams for this course – a midterm and a final. These will be in-class essay/short answer exams. The first mid-term will be on **Wednesday October 24<sup>th</sup>** and the final will be on **Friday, Dec 14<sup>th</sup>, during the final class**. Details on the exams will be forthcoming!!

## **G. Professionalism**

College is your gateway into the working world. Thus, I will follow practices of common courtesy and professionalism expected in the work place. I expect that you do the same. We will develop standards of professional behavior together on the first day of class.

Rules (we will come up with these on the first day of class):

- 1.

## **H. Lecture (graduate students only)**

This is the one assignment that differs for graduate students. In standing with your graduate student stature, you will write and give a lecture in class. Your mission is to choose a topic within

the field of plant ecology that strongly interests you and prepare (and execute) a lecture on this topic. This is often a very rewarding experience for students. Please meet with me early on to see the general list of topics we will cover and discuss your specific interests. I will help you as much as possible with your choice and in the early stages of preparation. My goal with this assignment is help you prepare for your future career with public speaking experience, in-depth knowledge on a topic that interests you, and presentation skills.

**Policies**

**A. Grading**

Please note: If you have any concerns about meeting any of the course requirements, talk to me (outside of class) as soon as possible. I do not curve grades.

Problem Solving/Homework	50
In-class questions: 5 × 10 points each	50
Friday Discussion:	
Leading discussion 1 time	60
Weekly reflection papers/questions – 11 × 10 points	110
Exams 2 × 60 points each	120
Lab Reports 2 × 60 points each (including revisions)	120
Short Lab Reports 2 × 10 points each	20
Lab Report review 2 × 30 points each	60
Research Proposal (with revisions)	100
Professionalism Points	60
Lecture (graduate students/555 only)	150
<b>Total:</b>	<b>750 points (or 900 for 555 students)</b>

**Grade Penalties:** Unexcused absence from lab -25 points

**Grading Scale (355)**

Percentage	Grade		
93%-100%	A	70%-72.5%	C-
90-92.5%	A-	67%-69.5%	D+
87%-89.5%	B+	63%-66.5%	D
83%-86.5%	B	60%-62.5%	D-
80%-82.5%	B-	< 60%	F
77%-79.5%	C+		
73%-76.5%	C		

**B. Academic Honesty**

An honest attitude is critical to real learning and progress in all academic endeavors. Being an honest learner requires a commitment to abide by and foster academic honesty in all its aspects. I expect you to have a thorough appreciation of what academic honesty means, and to have made a firm commitment to embody these standards with regard to your own learning. Plagiarism is defined in Chapter 14 of the UWSP Rights and Responsibilities Publication.

### ***What is plagiarism?***

1. If you use someone else's ideas, even if you paraphrase them, and do not cite them.
2. If you take entire large phrases or sentences from sources without BOTH citing AND putting these passages in quotes.

**This is true for any written assignment or group assignment for which I expect everyone to turn in her/his own work.** This is also true for methods sections in lab reports – please do not plagiarize my lab handouts or written assignments. Plagiarism counts as using entire phrases or sentences from someone else's work, and using these as your own—even if you cite these phrase or sentences, it still counts as plagiarism unless you put other people's phrases in quotes.

### ***Why is plagiarism a bad thing?***

1. I cannot tell what you have learned—what you really understand and what you have simply copied.
2. **It is illegal.** In the working world, people are fired for this sort of thing. In academia, the consequences are also serious.
3. **It is deceptive and immoral.** It is not right to use ideas or words of others and not give them credit.

### ***How can people avoid it? (Plagiarism is really easy to avoid)***

1. If you can write in your own words about what you have read in an article **without even looking at the wording of the article itself**, you will likely do fine. Then, if you got the information from a source just cite that source appropriately.
2. If you must use someone's words, put quotes around them and cite them!
3. If you aren't sure, ask me! There is no penalty for asking me about something beforehand!

### ***What happens if a student plagiarizes an assignment?***

Any failure to follow the UWSP Academic Honesty Code (including plagiarism on any assignment, even if it involves one or two sentences) will result in a zero grade for that assignment, a meeting with me to discuss it, and a written letter to go in your university file, at the very least. If a second assignment is plagiarized by the same person, their course grade will drop by at least one letter grade. Here is the Very Important Link to the code: <http://www.uwsp.edu/centers/rights/RRBOOKLET8-2005-06.pdf>. Also, I reserve the right to submit any and all written student work to **turnitin.com**. I require that you turn in digital copies of all written assignments.

Please work and learn with an open attitude. We can only identify the limitations of our own thinking if we question ourselves and others in an open, rigorous way. In this sense, academic honesty is integral to developing analytic thinking skills, and critical to the process of real learning. Also, developing these skills (an open, flexible attitude, and respectfully critical) will serve you well in the working world, whatever you end up doing.

### **C. Late policy**

Assignments are due when they are due. Exceptions to this rule will only be granted if arrangements are made with the instructor *well in advance*. If you cannot complete an assignment on time, the grade will drop by half a letter grade per day. If you let me know ahead of time that you are sick or for some other reason cannot make it, you can hand in the assignment up to two days late without penalty. Thereafter, it is **your responsibility** to hand in the assignment on time. Exams must be taken at the assigned time and alterations to this schedule will only be made for

personal injury or emergencies (e.g. death in the family, serious accident, or hospitalization). In such cases, evidence of some kind must be provided and you are expected to reschedule the exam and/or complete the assignment as soon as possible.

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### **Going for help:**

If you need help with assignments or concepts we are learning, there are many ways to get that help:

1. Ask questions in class.
2. Study in groups outside of class—your peers may be able to explain things to you in different ways that can help (also use study suggestions handout posted on D2L).
3. Ask me questions during my office hours (or when I am available in my office, # 337)
4. Look at the exam keys I post after exams are over—do you understand why your answers were correct or incorrect?
5. If you still are feeling lost, consider a tutor—An excellent on-campus resource for writing is the Tutoring and Learning Center (TLC <http://www.uwsp.edu/tlc/>). Please do not be embarrassed to take your lab reports and any other writing to the TLC – they have helped many students improve their grade in my courses!
6. If you have a difficult time speaking up in class and are worried about your participation grade, please come and talk with me.

### **If you are having trouble that is more personal in nature, there are ways to get help:**

1. If you need someone to talk to, you can speak to me if you wish. You may wish to visit the UWSP Counseling Center (<http://www.uwsp.edu/counseling/tipsforstudents.aspx>) (715)346-3553, Delzell Hall. They help people with all sorts of problems, minor and major.
2. If you are experiencing difficulties that are affecting your grades, you may wish to visit the Student Academic Advising Center (<http://www.uwsp.edu/advising/>), (715)346-3361, Student Services Center (building #2) in room 103. They can help you decide what to do if you wish to drop or withdraw from a course.

### **Drinking and your GPA**

A recent study (Lust, Ehlinger and Golden, 2008) on the health and behavior of college students at the University of Minnesota confirms that the three behaviors with the most damaging effect on GPA were: drinking, spending excessive non-work time with tv/internet/computer, and sleeping too little.

In the study, the authors report that students who drank in the past two weeks had a gpa 0.3 points lower than non-drinkers, on average. This is less of an effect than the 0.5-point cost of binge-drinking any time during the semester. It is reasonable to expect that more drinking, and drinking over longer periods of time, have greater negative consequences on performance in college.

Keep in mind that these surveys necessarily exclude unsuccessful students: students who drop out or are suspended due to poor performance are obviously not included in a late-semester survey. This means the results are likely to be UNDERESTIMATES for the negative effects.

A summary of the report, containing a link to the full article, can be found at:  
<http://www.insidehighered.com/news/2008/10/21/health>

### **Citations:**

Parts of this syllabus were contributed by Karin Bodensteiner, Isabelle Girard (Grades and drinking), and Kama Almasi