

BIOL 2336: General Ecology Laboratory, CULC 487

Instructors:

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Tu 12:05, sec A Nicole Johnston & Molly Reichert
Tu 3:05, sec B Claire Dell & Haley Haufschild
Wed 3:05, sec C Haley Haufschild & Claire Dell
Th 12:05, sec D Molly Reichert
Th 3:05, sec E Nicole Johnston

TA contacts:

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Course Description: This lab is intended to accompany your experience in Biol 2335. We will talk about **populations** (natural selection, population growth), about **communities** (how individuals compete for resources, how populations are tied together by exploitative interactions), and about **ecosystems** (why does soil, air, and water quality matter; how do ecologists study landscapes; how do humans interact with the global ecosystem). We will discuss the scientific method, its application to ecological principles, and hone your skills in scientific communication. While this laboratory is the companion to BIOL 2335, your grade in each course is independently earned.

Course Goals: By the end of this course, you will be able to:

- (1) Identify and interpret basic ecological concepts through observation, experimentation, and modeled simulation,
- (2) Design experiments and use basic statistics to analyze data,
- (3) Write lab reports in the style accepted by Ecological scientific journals.

Required Textbooks and Materials:

Text: *Ecology*, 3rd edition. Cain et al. 2014. Sinauer.

Lab Manual: Available in the first week of the semester at the GT Barnes & Noble bookstore.

Additional materials: calculator, access to Tsquare, and appropriate clothing for outdoor field trips.

Attendance: 100% attendance is expected. Given that you are working with others to perform experiments and collect data, making up a lab is very difficult. **If you must miss a laboratory, you need to contact Zhichao Pu and your lab instructors as soon as possible.** If possible, we will arrange for you to attend a different section. There will be no make-up laboratories. Vacation, work commitments, and social events are not acceptable reasons to miss lab. Examples of legitimate reasons to miss a lab include serious illness, illness or death in your immediate family, and participation in official university activities. You will be required to provide documentation for excused absences. You will not be permitted to make up work for unexcused absences. Persistent tardiness will result in loss of points from your participation grade.

Learning Accommodations: If needed, we will make classroom accommodations for students with disabilities. These accommodations must be arranged in advance and in accordance with the ADAPTS office (<http://www.adapts.gatech.edu>).

Evaluation: Your grade will be calculated out of **330** points using the following scale:

A = 90-100% B = 80-89.5% C = 70-79.5% D = 60-69.5% F = 0-59.5%

Points will be based on the following:

4 Pre-lab Quizzes (10 pts each)	40
2 Just-in-time Reading Checks (10 pts each)	20
1 Plagiarism Exercise	15
5 In-class/Take-home Assignments (15 pts each)	75
4 Writing Samples	
Cemetery Methods & Results	30
Plant-Pollinator Methods, Results & Discussion	40
Competition Full Report	50
Participation	10
Final Presentation	50

Quizzes, Reports, and Presentation: Six T-square **quizzes** will be due prior to lab (**by 10 am on the day you have lab**) and will concentrate on the current day's material. Late submissions may be accepted with penalty. If you miss a quiz due to an unexcused absence from lab, you will receive a zero for that quiz.

In the **lab reports**, you will complete the data analysis and write one or more sections of the lab report. There are three assignments, each one increasing in length compared to the previous, in order to facilitate your development as a scientific writer.

At the end of the semester, each group will give a 15 minute PowerPoint **presentation** on the results of one of your lab projects. The presentation should include general background on the question, explicit hypotheses that were tested, the techniques used to test your hypotheses, and a discussion of the results.

Late assignments will be reduced one letter grade (10%) for each day it is late. In-class lab assignments will typically be due at the end of the laboratory session; whereas, lab reports will be due at the start of lab and may be submitted electronically to your TAs. Please proofread! All submitted work will be evaluated for proper grammar and spelling.

Academic Integrity: Academic dishonesty will not be tolerated. This includes cheating, lying about course matters, plagiarism, stealing class materials, or helping others commit a violation of the Honor Code. Students are reminded of the obligations and expectations associated with the Georgia Tech Academic Honor Code and Student Code of Conduct, available online at:http://www.deanofstudents.gatech.edu/integrity/policies/honor_code.php and <http://www.deanofstudents.gatech.edu/codeofconduct>. While students will collaborate in performing the experiments and collecting the data, **each student is expected to create their own figures and figure legends, and write their own lab reports and data analysis assignments.** Plagiarism includes reprinting the words of others without both the use of quotation marks *and* citation. As direct quotes are seldom used in scientific writing, you are expected to rephrase the words of others, without quotation marks, and provide the citation. If this is unclear, please ask your TA for help before turning in your assignment.

Lab Rules and Safety Precautions

1. You are required to wear closed-toe, full-heel shoes at all times. If you do not wear the appropriate footwear, you will be sent home to change. Lab coats are **not** required for stats-only or outdoor labs. You **DO** need to wear a lab coat when we are holding lab in the classroom: Weeks 2, 7, 10, 12, 13.
2. Eating and drinking **ARE NOT** permitted in the lab. If you carry a water bottle you must keep it tucked away in your bag.
3. You are responsible for cleaning up your work area and returning all materials to their proper place before leaving.
4. Please ask if you do not know how to operate lab equipment.
5. Notify your TAs immediately if you are injured or lab equipment has been damaged.
6. The use of cell phones, blackberries, etc. is not permitted during lab – including the calculator function. Please bring an actual calculator to each lab.
7. Personal laptops are not allowed in the wet lab.
8. Always be prepared for inclement weather when we have an outdoor lab scheduled – bring rain gear, hat, layers, etc. as necessary. **When raining, you will be expected to do activities that involve your hands – merely bringing an umbrella will make it difficult to conduct the lab and stay dry!** Invest in or borrow a rain jacket for the semester.
9. We recommend you bring a water bottle, use sunscreen, wear a hat, and wash your hands after handling organisms. Watch for poison ivy and check for ticks after field trips.
10. Failure to comply with these rules may result in loss of points from your participation grade.

Tentative Lab Schedule, Biol 2336

Prior to each week's lab, you should read the appropriate section in the lab manual as well as any relevant text from your lecture textbook.

Week	Dates	Pre-lab Activity	Lab Exercise	Assessment
1	Aug 19-21		Introduction	Plagiarism exercise
2	Aug 26-28	Tsquare quiz	Estimating Population Size ☀	1-pg summary (15 pt)
3	Sept 2-4		(Piedmont Pk) Plant Biodiversity Walk ☀	Tree practicum (15 pt)
4	Sept 9-11		Cemetery Demography ☀	-
5	Sept 16-18	Tsquare quiz	Cemetery Data Analysis	Methods & Results due Sep 23-25
6	Sept 23-25		Streams I ☀	-
7	Sept 30-Oct2	Tsquare reading check	Streams II ☀	1-pg summary (15 pt)
8	Oct 7-9		(ABGarden) Plant-Pollinator Syndromes ☀	Met, Res, & Disc due Oct 21-23
	Oct 14-16		<i>No lab – Fall Break</i>	-
9	Oct 21-23	Tsquare reading check	Optimal Foraging ☀	In-class work sheet (15 pt)
10	Oct 28-30	Tsquare quiz	Competition I	-
11	Nov 4-6		Island Biogeography ☀	1-pg summary (15 pt)
12	Nov 11-13	Tsquare quiz	Crayfish Defense & Communication	-
13	Nov 18-20		Competition Data analysis	Full Report due Nov 26
	Nov 25-27		<i>No lab – Thanksgiving Break</i>	
14	Dec 2-4	Upload ppt to tsquare	Presentations (foraging, crayfish, plant, stream)	-

☀ denotes an outdoor lab