

BIOL 2336: General Ecology Laboratory, CULC 487

Instructors:

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Tu 12:05, sec C Cory Padilla & Ana Clavere-Graciette
Tu 3:05, sec B Haley Haufschild
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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 Dr. Green 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 Office of Disability Services (<http://www.disabilityservices.gatech.edu>).

Evaluation: Your grade will be calculated out of **310** 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:

9 Pre-lab Quizzes (5 pts each)	45
3 Just-in-time Reading Checks (10 pts each)	30
1 Plagiarism Exercise	15
5 Writing Samples (15 pts each)	75
1 Full Lab Report	50
2 Presentations (30 pts each)	60
Participation (includes in-class activities)	35

Quizzes, Reports, and Presentation: Nine pre-lab **quizzes** will be given at the beginning of lab and will concentrate on the current day's material. Late arrivals to lab may be allowed to take the quiz with penalty. If you miss a quiz due to an unexcused absence from lab, you will receive a zero for that quiz. Three online **reading checks** will assess your understanding of primary literature articles that complement the activity in lab that week.

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.

Twice during 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 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. 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.
8. 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.
9. 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 to prepare for an in-class quiz.

Week	Dates	Pre-lab Activity	Lab Exercise	Assessment
1	Jan 12-14		Introduction & Estimating Population Size	In-class exercise (5 pt)
2	Jan 19-21		Cemetery Demography Analysis ☼	
3	Jan 26-28		Population Dynamics of Tpadas	Results due Feb 2-4 (15 pt)
4	Feb 2-4		Competition I (plants)	Methods due Feb 9-11 (15 pt)
5	Feb 9-11	Paper reading check	Competition II (protists)	Intro due Feb 16-18 (15 pt)
6	Feb 16-18		Optimal Foraging ☼	In-class exercise (5 pt)
7	Feb 23-25		Crayfish Defense & Communication	
8	Mar 1-3	Upload ppt to tsquare	Presentations (cemetery, Tpadas, crayfish)	
9	Mar 8-10	Paper reading check	Island Biogeography ☼	Discussion due Mar 15-17 (15 pt)
10	Mar 15-17		(ArkFab) Community Dynamics ☼	In-class exercise (5 pt)
	Mar 22-24		<i>No lab – Spring Break</i>	
11	Mar 29-31	Paper reading check	Competition III (Data analysis)	Full Report due Apr 5-7 (50 pt)
12	Apr 5-7		(ABGarden) Tree Biodiversity Walk ☼	Tree Practicum due Apr 12-14 (15 pt)
13	Apr 12-14		(ABGarden) Plant-Pollinator Syndromes ☼	In-class exercise (5 pt)
14	Apr 19-21	Upload ppt to tsquare	Presentations (competition, pollinators, islands)	

☼ denotes an outdoor lab