BIOL 2336: General Ecology Laboratory

Instructors:

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Tu 12:05, sec A	Rachel Lasley-Rasher & Larisa Pender-Healy
Tu 3:05, sec B	Aerin DeJarnette & Kristine Schaffer
Wed 3:05, sec C	Kristine Schaffer & David Gibbs
Th 12:05, sec D	David Gibbs & Rachel Lasley-Rasher
Th 3:05, sec E	Larisa Pender-Healy & Aerin DeJarnette

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Classrooms: 304 Cherry Emerson (wet lab) and 301B Cherry Emerson (computer lab)

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 and its application to ecological principles. 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*, 2nd edition, M.L. Cain, W.D. Bowman, and S.D. Hacker, 2011, Sinauer Assoc..
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 instructor 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.

Evaluation: Your grade will be calculated out of 275 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:

5 Quizzes (4 pre-lab & 1 praticuum, 10 pts each)	50
5 In-class Lab Assignments (15 pts each)	75
3 Writing Samples	
Wasp Competition Methods	15
Crayfish Methods & Results	25
Streams Full Report	50
Participation	10
Final Presentation	50

Quizzes, Reports, and Presentation: Four T-square **quizzes** will be taken prior to lab (by 9 am on the day you have lab) and will concentrate on the current day's material. Late submissions may be accepted with penalty, at the discretion of Dr. Green. If you miss a quiz due to an unexcused absence from lab, you will receive a zero for that quiz. One additional **quiz** will be given during lab in the week of Sept 20-22 on the material presented in the Plant Biodiversity Walk. You may be asked to identify a specimen, use a taxonomic key, and discuss the habitat requirements of a given species.

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 20 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 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.

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).

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 at this time for Ecology lab.

2. Eating and drinking ARE NOT permitted in the lab.

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, etc. as necessary.

9. We will probably get wet and/or dirty during field trips, so please consider your footwear and clothing choices prior to arriving at lab.

10. 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.

11. 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 indicated text from your lecture textbook.

Week	Dates	Pre-lab Activity	Lab Exercise	Assessment
	Aug 23-25		*No lab*	
1	Aug 30-Sep1	**Tsquare quiz**	Estimating Population Size ☼	In-class worksheet
2	Sep 6-8		Cemetery Demography ☼	-
3	Sep 13-15	-	Plant Biodiversity Walk	-
4	Sep 20-22	**Plant Biodiv quiz**	Wasp Competition & Predator-Prey Simulation	**Wasp Methods due Sep 27-29**
5	Sep 27-29	-	Optimal Foraging ☼	In-class worksheet
6	Oct 4-6	**Tsquare quiz**	Plant Competition & Cemetery Analysis	In-class worksheet
7	Oct 11-13	-	Stream Biodiversity and Function ☼	see wk 11
	Oct 18-20	-	*No lab – fall break*	-
8	Oct 25-27	-	Crayfish Defense Strategies	**Methods & Results due Nov 1-3**
9	Nov 1-3	-	Competition I Analysis	See wk 12
10	Nov 8-10	**Tsquare quiz**	Island Biogeography ☼	In-class worksheet
11	Nov 15-17	-	Streams II ☼	**Full Report due Nov 29-Dec 1**
	Nov 22-24	-	*No lab – Thanksgiving break*	-
12	Nov 29-Dec1	**Tsquare quiz**	Competition II Analysis	In-class worksheet
13	Dec 6-8	Upload ppt to tsquare	Presentations (wasps, stream, islands, crayfish)	

☼ denotes an outdoor lab

*An optional weekend hike will be offered in late September/early October.
You will be able to select from one of 3 days for the hike. Dates will be posted soon.