

Biology 2336: General Ecology Lab

Tentative syllabus

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Course Overview: Ecology lab is the companion laboratory for Ecology (Biology 2335). This course will emphasize an understanding of ecological concepts through lab, field and computer exercises with the goal that you be able to design, execute and analyze ecological experiments on population dynamics, competition, predation, community structure and biodiversity. Note that the while Biology 2335 is a co-requisite, 2336 is a stand alone course having its own assignments, presentations and examinations; your evaluation / grade in the two courses will be independent. The computer programs we will use are EcoBeaker (EB), which is proprietary and cannot be loaded onto students' computers, and Populus (P), which is public domain. We encourage students to visit Don Alstad's Populus site (see below) and download the program for themselves (Populus is written for Windows, Linux and Mac OS X) – in addition to helping you visualize many of the models discussed in 2336 and 2335, there is an abundance of background material built into Populus. www.cbs.umn.edu/populus/

Grading: Your grade for the course will be determined by you scores on ten lab reports (50%), two exams (worth 15% and 20%), and two in-class presentations (15%). Students will work in pairs on lab exercises, and on the reports which will be turned in at the beginning of lab the following week. For the reports, each student will receive the same grade. If you feel that your partner is not contributing his or her fair share, see me – hopefully before the report is due – and either the TAs or the instructors will talk to that person. We are not going to assign partners, and you may work with whomever you wish. In the second week, we will describe our expectations for the reports, as well as an example report you should use as a guide. The lab examinations will be non-multiple choice: short answer, essay, fill-in-the-blank, etc., testing your comprehension of the theory and applications of ecology; particularly, the design and analysis of ecological experiments. The first presentation will be of the pollination biology project, and the second will be on the longitudinal pond study or the stream / forest biodiversity studies. Our expectations for the projects and presentations will be described in detail later in the semester. In general, the reports should include the following sections: an Introduction, in which you set the background and context of the question that you asked; a Methods section, in which you describe what you did in sufficient detail that someone familiar with ecology could repeat your study; a Results section, in which you describe and provide your data in tables or figures, whichever you feel provides the greater understanding (often in ecology, the results section will include whatever statistical analyses you used to understand your data); finally, a Discussion section in which you make sense of your results, and set them into the context you developed in the introduction. The discussion and the introduction sections are the most important parts of the report, as these will exhibit your knowledge and understanding of the material (and these sections will be worth more points).

Attendance: is mandatory. While missing a lecture is to be avoided, missing a lab causes real problems. Any unexcused absence from lab will cost you 5% off your final grade. If you miss an lab session, you must demonstrate to Dr. Rogers that the absence was excusable. Examples of

excusable absences include documented illness, death in family, or accident. If you know that you are going to be absent from lab, you need to notify the either the instructor or the TAs beforehand. Unexcused absences from presentations or exams will result in a grade of 0.

Honor issues: Your conduct in this course is expected to conform to the GT Student Honor Code (<http://www.registrar.gatech.edu/rules/18.php>). Some of your reports will be turned in as a group. In such cases we obviously hope that all members of the group contribute equally, even if it turns out that one member does the bulk of the writing. There is nothing wrong with this, and in fact it is quite common in science. What is not okay is for one group member to steamroll others OR to kick back and not do their share. If there are such problems within the group, try to work it out amongst your selves, then involve the TAs, then involve Dr. Rogers. In other instances, group members will share data, but turn in separate reports. In such instances, copying text from one another, or some other source (wikipedia, someone's webpage, an article you read as background) is outright plagiarism and will be dealt with as such. Read, digest and put your thoughts in your own words. Cheating stinks – don't do it.

Schedule:

Jan.10, 11:	Introduction to course and to probability thinking	
Jan.17, 18:	<i>Pollination biology / observations</i>	[Handout]
Jan.24, 25:	Isle Royale – population growth, predator-prey cycles	[EB, P]
Jan.31, Feb.1:	Limiting nutrients and competition	[EB]
Feb.7, 8:	Drosophila oviposition choice: niche partitioning	[Handout]
Feb.14, 15:	Mother Nature's supermarket (optimal foraging)	[EB]
Feb.21, 22:	Herbivory: rotifer grazing	[Handout]
Feb.28, Mar.1:	Midterm exam	
Mar.7, 8:	Review test, presentations	
Mar.14, 15:	Stream / Forest Biodiversity lab; assessing ecosystem integrity	[Handout]
Mar.21, 22:	Spring Break	
Mar.28, 29:	Corridors, stepping stones, and butterflies	[EB]
Apr.4, 5:	Pond analysis	[Handout]
Apr.11, 12:	Sick fish: ecoepidemiology	[EB]
Apr.18, 19:	Stream / Forest presentations	[Handout]
Apr.25, 26:	Final exam	