INSECT ECOLOGY LAB

ENY 6203L

1 credit hour

Fall 2013
Online sections

Instructor: Dr. Heather McAuslane
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Office Hours: Available by phone from 8:30 a.m. till 4:30 p.m. (Eastern Standard Time) or email during the work week. I will respond to your call or email within 24 hours. Skype calls can be arranged for more detailed questions.

Course Website: http://lss.at.ufl.edu

Course Communications: Please communicate with the instructor about private issues through the course management system. Questions about course content that may benefit from peer input can be posted on the class general discussion board. The discussion board is moderated by the class instructor.

Required Text: Henderson, P. A. 2003. Practical Methods in Ecology. Blackwell Publishing.

Course Description: This lab class in designed to introduce you to common techniques used in insect ecology field research and to be comfortable with the manipulation of data derived from ecological experiments. A major component of the course gives you practice in writing up research results as a scientific paper. This is one of the required courses in the entomology graduate curriculum and should be taken concurrently with the Insect Ecology lecture course, ENY6203.

Prerequisite Knowledge and Skills: ENY 3005/5006, or any introductory entomology course.

Course Goals and/or Objectives: By the end of this course, students will be able to:

1) Assess the extent of foliar damage done by insect herbivores;
2) Model insect development and population dynamics through various techniques;
3) Estimate insect population size through various techniques;
4) Describe insect diversity within ecosystems;

5) Evaluate and critique content of scientific journal articles;
6) Analyze experimental data and write a manuscript in the format required for publication in a scientific journal.

Instructional Methods: Class material to be learned consists of readings from the assigned textbook and scientific journal articles, and narrated PowerPoint presentations, supplemented with videos or podcasts when available. Assignments to reinforce class material include short reports after data analysis and a scientific paper.

Course Policies

Attendance Policy: As this is an asynchronous online course, there are no requirements for synchronous participation.

Quiz/Exam Policy: There are no quizzes or exams.

Assignment Policy: Late assignments will lose 25% of their score per day, including weekend days. Thus, if an assignment is more than four days late, the grade for the assignment will be zero. Assignments and exams must be submitted by 11:59 p.m. (Eastern Standard Time) on the day that they are due to get full credit.

Course Technology: The course is administered in E-learning through Sakai. Students will need a Gatorlink account to access the course web site (http://www.gatorlink.ufl.edu/). All students should have unlimited access to a computer with either Windows 7 or Mac OS X operating systems. Students should make sure to have access to a back-up computer in case of equipment failure. A high-speed Internet connection is highly recommended. Students will need speakers, microphone, and headphones to hear and record presentations. Microsoft Office Excel is recommended for all data analysis but OpenOffice (freeware) may suffice http://www.openoffice.org/. A statistical analysis package, beyond Excel, may be useful but is not necessary.

Plagiarism: Please understand that my purpose in bringing to your attention the matter of plagiarism is to help train you to be ethical scientists, not to impugn your character.

Plagiarism is a serious problem in academia today, especially with the ease of obtaining information from the World Wide Web. Plagiarism is defined as representing the words or ideas of another person as one's own, without attribution to the source. All words and ideas must be attributed to a source unless they are considered common knowledge (i.e., widely known by many people and found in many different sources). There are many kinds of plagiarism, as you will read on the Guide to Plagiarism website referenced below. One of the most common forms is insufficient paraphrasing. Even with attribution, you may be guilty of insufficient paraphrasing because your sentence too closely follows the content and structure of the cited author's sentence.

Plagiarism is unethical, unacceptable in science, and prohibited by the UF Student Honor Code (http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php). The consequences for plagiarism while at the University of Florida range from receiving a grade of zero for the plagiarized assignment or a failing grade for the course, to, for repeated offenses, expulsion from the university. Plagiarism after graduate training calls into question one's scientific integrity and can lead to banning of publication in journals and the loss of jobs/careers.

In some countries, it is an acceptable practice to write in a manner that faculty members at the University of Florida consider being plagiarism. Students studying in our university and with plans to publish their research in the English language need to know what plagiarism is and how to avoid it.

Students who plagiarize will be caught and consequences will be applied. I check all written assignments using anti-plagiarism software called Turnitin® (http://turnitin.com/en_us/products/originalitycheck). Students who plagiarize will receive a grade of zero on the assignment. The second instance of plagiarism in the course will result in an automatic failing grade in the course.

For further information and examples of plagiarism, I strongly suggest that you read the George Smathers' Library Guide to Plagiarism at http://www.uflib.ufl.edu/msl/07b/students.html

UF Policies

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

Copyrighted Materials and Software Use: All students are required and expected to obey the laws and legal agreements governing copyrighted material and software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Netiquette: Communication Courtesy: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf

Getting Help

For issues with technical difficulties for E-learning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Complaints: Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See http://distance.ufl.edu/student-complaints for more details.

Grading Policies

Assignment	Percentage
Critique of scientific journal article	10
Measuring insect microclimate	10
Herbivory lab report in the format of a scientific journal article	40
Mark-release-recapture	10
Sampling methods	10
Life tables/population dynamics modeling	10
Insect diversity	10

Lab report in the form of a scientific journal article. Each student will write a manuscript that includes title, abstract, introduction, materials and methods, results, discussion and cited references for laboratory 3 (Measuring Insect Herbivory).

The manuscript should be in the style of Environmental Entomology, a publication of the Entomological Society of America (http://www.entsoc.org/Pubs/Publish/Style/index.htm). I will return the reports with comments and corrections within one week. A second corrected

report, addressing my comments, will be due two weeks after the original due date. I will grade the second submission.

Grading Scale: Grades will be based on the following scale:

A, 93-100; A-, 90-92; B+, 87-89; B, 83-86; B-, 80-82; C+, 77-79; C, 73-76; C-, 70-72; D, 60-69; E, <60.

Course Schedule

Start module	Topic of module	Reading	Assignment	Due date
Aug. 26	Reading and writing scientific literature	Losey et. (1999); Tschenn et al. (2001)	Critique of Tschenn paper	Sept. 2
Sept. 2	Influence of temperature on insect development and measuring microclimatic variables	Dent (1997) (section 4.4); Winston and Bates (1960)	PowerPoint presentation on microclimate and calculation of physiological time of development	Sept. 9
Sept. 9	Measuring insect herbivory	McAuslane and Alborn (1998); O'Neal et al. (2002)	Lab report in format of scientific paper Draft Final	 Oct. 11 Oct. 25
Sept. 30	Marking techniques	Hagler and Jackson (2001); Henderson, Chap. 4	Marking three species of insects and population estimates using MMR	Oct. 7
Oct. 14	Foraging behavior and functional responses	Stewart et al. (2002)	Populus modeling	none
Oct. 28	Sampling methods	Henderson, Chaps. 1, 3, 6	Sampling calculations	Nov. 4
Nov. 11	Life tables and population dynamics	Dent (1997) (rest of Chap. 4); Henderson, Chap. 9	Life table calculations and Populus modeling	Nov. 18
Nov. 25	Litter/soil arthropod communities	Henderson, Chap. 10, Coleman and Crossley, (1996)	Diversity calculations	Dec 2

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

Critical Reading of Scientific Articles

Whenever you read a primary journal article, think about the following questions. Just because a paper has been published in a scientific journal, does not necessarily mean it was good science or it was well-written. As you are reading the assigned journal articles, think about these questions.

1. What are the specific hypotheses (and alternative hypotheses) or questions that are being explored?
2. Do the authors relate the specific hypotheses to a larger area of science (i.e., the "big picture")?
3. Do the hypotheses follow logically from the background material that is presented in the Introduction section?
4. Do the authors make specific predictions of outcomes after manipulative experiments or was their study purely descriptive or comparative?
5. Are the experimental design and the methods used appropriate to answer their questions?
6. Are the methods described well enough to be repeated by other research groups?
7. How were the data analyzed? Was the analysis appropriate or can you think of a better way to do it? Think also if the data could have been collected differently to facilitate the analysis.
8. Are the data portrayed effectively in figures and tables? Are they clear and necessary or could the data have been presented in the text?
9. Do the results match the predictions the authors made?
10. If results differ from predictions or from the published research of other groups, do they address the differences and suggest reasons?
11. What are the authors' conclusions? Would you have reached the same conclusion from these results? Have they made a strong case for their conclusions? What else could you propose to bolster their conclusions? What kinds of data would have convinced you?
12. What are the implications of these findings for the subfield and entomology more generally? How can these findings be extended into the "big picture".
13. Where should this research go next? What should the next experiments be?
14. You may also think about the quality of the presentation of the article. Does the paper tell a nicely packaged "story" with sound reasoning throughout the paper? Are there areas where the paper wanders from the argument? Are the major points of the paper accurately and consistently presented in the title, abstract, key words, introduction and conclusions? Was the writing easy to understand, interesting, and not too wordy?