Lecture: Monday, Wednesday and Friday, Period 4 (10:40 a.m.-11:30 a.m.), Room 1027

Laboratory: Wednesday, Periods 7 and 8 (1:55 - 3:50 p.m.), Room 3118

Instructor:
Dr. Heather McAuslane
Room 2109, Entomology-Nematology Bldg.
Bldg. 970, Natural Area Drive
P.O. Box 110620
TEL 352-273-3923
FAX 352-392-5660

Office Hours:
Office hours are 1 hour immediately following the lecture or by arrangement. You can also stop by my office at other times but I suggest you call or email me for an appointment first so that you don’t miss me if I’ve stepped out.

Course Description:
This course is an introduction to the concepts in ecology with emphasis on insects. The relationships of insects with their biotic and physical environments, along with the roles of insects in nature, will be emphasized. The basics of ecological research will also be covered. This is one of the required courses in the entomology graduate curriculum.

Objectives and Goals:
To understand concepts in ecology; to understand the roles of insects in ecosystems; to examine examples and current issues in insect ecology.

Prerequisites:
ENY 3005C, Principles of Entomology, or equivalent

Textbooks:


Class Website
http://entomology.ifas.ufl.edu/mcauslane/eny6203/index.htm

This site is password protected. You will need to supply your Gatorlink username and
password for access (ufad\yourGatorlinkname). This site has PowerPoint outlines for the lectures if you want to print them out before coming to class. Readings other than the textbook will be there, as will descriptions of the laboratories (methods, videos, assignments etc...).

Please see the website before each lab and lecture to see whether there is information for you to read to prepare for class.

<table>
<thead>
<tr>
<th>Topics to be Covered in Lecture</th>
<th>Text Readings to Prepare for Class</th>
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<tbody>
<tr>
<td></td>
<td>(other readings will be assigned on the web page)</td>
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<tr>
<td>Overview and importance of insect ecology</td>
<td>Speight, Chapter 1</td>
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<tr>
<td>Insects and climate</td>
<td>Speight, Chapter 2, Chap. 7 (7.4-7.7)</td>
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<tr>
<td>Insect herbivores</td>
<td>Speight, Chapter 3</td>
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<tr>
<td>• Introduction to herbivory</td>
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<tr>
<td>• Plant defenses and insect counteradaptation</td>
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<tr>
<td>Resource niche and competition</td>
<td>Speight, Chapter 4</td>
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<tr>
<td>Natural enemies and insect population dynamics</td>
<td>Speight, Chapter 5</td>
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<tr>
<td>• Natural enemy behavioral ecology</td>
<td></td>
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<tr>
<td>• Predator-prey and host-parasite interactions</td>
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<tr>
<td>• Insect defenses against enemies (if time)</td>
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<tr>
<td>Evolutionary ecology</td>
<td>Speight, Chapter 6, Chap. 7 (7.1-7.3, 7.8-7.10)</td>
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<tr>
<td>• Mutualisms</td>
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<td>• Pollination</td>
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<td>• Life history strategies</td>
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<tr>
<td>Insects in ecosystems</td>
<td>Speight, Chapter 8</td>
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<tr>
<td>• Ecosystem fundamentals</td>
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<tr>
<td>• Insects and ecosystem function</td>
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<td>• Sampling insect populations</td>
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<tr>
<td>Biodiversity</td>
<td>Speight, Chapter 9</td>
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<tr>
<td>• Measuring community structure</td>
<td></td>
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<tr>
<td>• Factors affecting community structure</td>
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Laboratory Schedule

L1  Aug. 22  Reading and writing scientific literature
L2  Aug. 29  Influence of temperature on insect development and measuring microclimate variables important in insect ecology
L3  Sept. 5  Measuring plant herbivory
L4  Sept. 12  Discussion of L2 and L3 (microclimate presentation and assignment due)
L5  Sept. 19  Presentation and discussion of plant-herbivore interaction theories
L6  Sept. 26  **Midterm I**
L7  Oct. 3  Marking techniques
L8  Oct. 10  Foraging behavior and functional responses
L9  Oct. 15/17  Sampling methods
L10 Oct. 24  Discussion of L7 and L8 (hand in assignment for L7)
L11 Oct. 31  **Midterm II**
L12 Nov. 7  Litter/soil arthropod communities
L13 Nov. 14  Life tables/population dynamics (in computer lab)
L14 Nov. 21  Thanksgiving holiday
L15 Nov. 28  Student presentations - discuss and hand in L9 assignment
L16 Dec. 5  Student presentations continued - discuss and hand in L12 and L13 assignments

*Required readings to supplement laboratories:*


L3

L4

None - discussion

L5


L6

None - midterm I

L7


Southwood, T. R. E., and P. A. Henderson. 2000. Chapter 3 - Absolute population estimates using capture-recapture experiments in Ecological Methods. Chapman and Hall, New York (This is the classic reference but is tough going. Read only if you think you will need to do mark-recapture in your research).

L8


L9


Assignments and Methods by which the Student will be Evaluated and Grades Determined:

Lecture course (ENY 6203 - 3 credits)

The grade will consist of:

- Three midterm exams (20% each). Exams are not cumulative.
- A 10-minute oral PowerPoint presentation on an ecological topic that is not covered in detail in class (see description on p. 8) (15%).
- A 300-word written abstract of the presentation with references (5%).
- An oral presentation on plant-herbivore interaction theories. This will be a 10-minute oral PowerPoint presentation on one of the main theories proposed to explain the pattern of plant-insect interactions observed in nature. The instructor will assign students to groups and each group will be assigned one theory. The students in a group...
will read the primary literature and meet to digest and discuss that theory. Each group will search the literature published since the proposal of their assigned theory to determine whether the theory has been substantiated or disproved. All students must help in preparing the presentation but one student may act as the presenter for each group (20%).

**Laboratory course (ENY 6203L - 1 credit)**

- Assignments - 40%.
- Participation in lab discussions - 10%.
- One laboratory report written in the style of a scientific manuscript - 50%. Each student will independently write a manuscript that includes abstract, introduction, materials and methods, results, discussion and cited references for laboratory 3 (Measuring Plant 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 will be due two weeks after the original due date. Students will ask a class mate to review the manuscript between the time of the first and second submission. I will grade the second submission.

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
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<tr>
<td>A-</td>
<td>90-92</td>
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<tr>
<td>B+</td>
<td>87-89</td>
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<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
</tr>
<tr>
<td>C+</td>
<td>77-79</td>
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<tr>
<td>C</td>
<td>73-76</td>
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<tr>
<td>C-</td>
<td>70-72</td>
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<tr>
<td>D</td>
<td>60-69</td>
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<tr>
<td>E</td>
<td>&lt;60</td>
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The following web page provides information on passing grades and grade points: http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html.

**Policy Related to Class Attendance:**
Attendance is not mandatory; however, the student will miss important discussions that may arise during class. Such material may be asked on exams.

**Policy Related to Assignments:**
Late assignments will lose 25% of their score per day, including weekend days. Thus, if the
assignment is more than four days late, the grade for the assignment will be zero.

**Policy Related to Make-Up Exams or Other Work:**
Arrangements for a makeup midterm exam (required because of attendance at a scientific meeting or other valid reason) must be made at least one week prior to the exam. If the student misses an exam due to a medical or family emergency (accompanied by a note from a medical professional), a makeup exam will be scheduled as soon as the student returns to class.

**Class Demeanor Expected by Instructor:**
Be kind, considerate and respectful of others; clean up after yourself in the laboratory. Cell phones turned off and no texting please.

**Critical Dates:**

<table>
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<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>September 12</td>
<td>Microclimate presentations and assignment due</td>
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<tr>
<td>September 19</td>
<td>Oral presentation on plant-insect interaction theories</td>
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<tr>
<td>September 26</td>
<td>Exam I (in lab period)</td>
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<tr>
<td>October 3</td>
<td>First draft of herbivory lab report due (re-write due October 17)</td>
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<tr>
<td>October 5</td>
<td>See instructor for approval of presentation topic</td>
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<tr>
<td>October 24</td>
<td>Hand in marking techniques lab assignment</td>
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<tr>
<td>October 31</td>
<td>Exam II (in lab period)</td>
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<tr>
<td>November 14</td>
<td>Abstract and references for presentation due to instructor for editorial comments</td>
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<tr>
<td>November 28</td>
<td>Abstract and references due to instructor for grading and email distribution to classmates (both groups)</td>
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<tr>
<td>November 28</td>
<td>Class presentations - hand in sampling lab assignment</td>
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<tr>
<td>December 5</td>
<td>Class presentations - hand in population dynamics and diversity lab assignments</td>
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<tr>
<td>December 5</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>December 11</td>
<td>Exam III (in scheduled exam period – 7:30-9:30 a.m. – to be discussed)</td>
</tr>
</tbody>
</table>

**Plagiarism:**

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.

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 to be 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 an 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 please read the George Smathers’ Library Guide to Plagiarism at http://www.uflib.ufl.edu/msl/07b/students.html

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

Additional General Information
The following information applies to all courses at the University of Florida.

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standard of honesty and integrity”.

**Academic Honesty:** As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

**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.

**Accommodations for Students with Disabilities:** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

**University Counseling Services:** Resources are available on-campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:
Class Presentation

The class presentation can cover any specific topic relating to insect ecology but should not be your own current or past research. Grades will be assigned on a formal 10-minute PowerPoint presentation, an abstract, and a handout of literature references that were consulted to research the presentation topic. The presentation is worth 15% of the class grade and the abstract and references are worth 5%. Please confirm your choice of topic on or before October 5.

Topic

Your presentation will be a talk similar to what you may have seen/heard at a national, regional or state entomology meeting. Use 2 or 3 of the papers as background information and rationale for the studies that you are going to describe. Then describe select experiments from 2 of the papers in a research talk format including title, introduction, materials and methods, results, and significance/conclusions/implications. You will have 2 minutes, after your 10-minute presentation, for questions from the audience. Your topic should focus on specific examples, and not on general principles. Some examples:

Too general - Mating disruption as a tool for insect pest management  
Good - Mating disruption to control codling moth in Washington plum orchards

Too general - Effect of climate change on arthropod-borne diseases  
Good - Potential effect of climate change on incidence of malaria in Florida

Too general - Factors influencing insect diversity in North America  
Good - Effect of habitat disturbance on insect diversity in Florida sand dunes

Reference List

It will be necessary to consult recent primary literature (i.e., research articles in journals) to prepare your presentation. A list of five correctly cited publications (in the style of Environmental Entomology1) is required.

Abstract

An abstract is required and is limited to 300 words. "The abstract should: 1) state the principal objectives and scope of the investigation, 2) describe the methodology employed, 3) summarize the results, and 4) state the principal conclusions"2.

The abstract and references are due on November 14 by 5 p.m. by email so that I can provide you detailed
editorial comments. I will not grade this first submission. I will return the abstracts and reference list to you by November 20 so that you can make the changes before the due date of November 28.

1 Consult the Entomological Society of America Style Guide's References cited section at the following URL for the correct citation format: http://www.entsoc.org/Pubs/Publish/Style/index.htm