

**Turf and Ornamental Entomology (ENY5516)**  
**Web Course (3 credits) for Graduate Students**  
**Spring 2012 Syllabus**

**Instructor:**

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**Office Hours:**

Because this is a web course, please make appointments via email (eabuss@ufl.edu) or office phone (352-273-3976). Specimens are available to examine in the lab, if requested.

**Course Description:**

Identification, biology, and management of common arthropod families and species inhabiting turfgrasses and popular ornamental plants in the urban environment (emphasis on the Southeastern U.S.) are discussed. Integrated pest management (IPM) (e.g., safe handling and use of insecticides, biological and cultural control, plant resistance, etc.) is emphasized.

This course is intended for students with a plant (e.g., Environmental Horticulture, Horticulture, Agronomy, Forestry, etc.) or urban/landscape pest management background, or those pursuing pesticide certification. There are no prerequisites.

**Course Objectives:**

By the completion of this course, students will be able to:

- Explain the rationale behind different IPM tactics in landscape pest management
- Recognize arthropods in different horticulturally-important orders and families by sight and written description
- Differentiate arthropod signs and symptoms, and deduce the problem on various sites like lawns, golf courses, athletic fields, sod farms, woodlots, nurseries, greenhouses, annual plant beds
- Anticipate the activity periods, evaluate turf and ornamental plant health, and create a practical management plan for major arthropod pests

**Course Expectations:**

Students should view three narrated lectures each week to keep up with the schedule of topics. Lectures can be accessed in Sakai, by opening Firefox (Mozilla) and going to <https://lss.at.ufl.edu>. The student's UF Gatorlink username and password are necessary to log into the system. Tutorials are available in Sakai under "Help," if needed.

**UF Computer Hardware/Software Requirements:**

A computer that can view PowerPoint and pdf files, has adequate memory and speed, and meets the minimum standards for UF computer use is needed. The following website explains the University of Florida computer hardware and software policy:

[http://dell.techhub.ufl.edu/computer\\_requirement.html](http://dell.techhub.ufl.edu/computer_requirement.html). Firefox (Mozilla) must be downloaded

from the internet to access the course materials: <http://www.mozilla.com/en-US/firefox/ie.html>. In addition, Flash is needed; you will be prompted to download the most current version if it is not already on your computer. Contact the UF Computing Help Desk (352-392-4357; [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)) with any technological problems.

### **Insect Collection:**

A specimen collection is required for this class. Instructions on the number of specimens, acceptable orders and families, how to prepare specimens, the due date, etc., will be posted described in a handout. For tips on insect preparations, see the chapter on “Collecting and preserving insects” by D. J. Borror and R. E. White and Lecture 6.

### **Featured Creature Article:**

Graduate students are required to write a new Featured Creature article (for examples, see: <http://entomology.ifas.ufl.edu/creatures>). Students may select from a list of pests and beneficial arthropods provided by the instructor or have a new topic approved. The format for each article must conform to the headings and type of information found in most of these Featured Creature articles (a document with topics and detailed instructions will be posted under Assignments).

After the topic is approved, a first draft will be reviewed/graded by the instructor, returned, and a final draft must be submitted through Sakai in Assignments. Its originality will be determined via TurnItin. High quality articles may be published, if the article is reviewed by an entomology faculty member, and submitted with a resume or CV. This would likely occur after this class is completed (and is the student’s responsibility). Students must request permission for use of any illustrations.

### **TEST/QUIZ PROCEDURES:**

1. Assessments are closed-book and on-your-own in Sakai! Therefore, working with others or phone/web/textbook/note use during quizzes and tests, and copying and/or sharing test questions/answers with others, are prohibited, will result in a zero on that test or quiz, and the student(s) involved will be reported. Individual work is important.
2. Each student only has 60 minutes to take a test and 15 minutes to complete a quiz, unless otherwise indicated.
3. If the assessment is not finished within that time period, it will be automatically submitted.
4. Caution: if you login to a test/quiz and then logout, Sakai will not let you back in and the test/quiz will be graded on the work that was done.
5. The grade you see upon submission of a test/quiz is only a partial score. Please allow the instructor a week for grading. Sakai doesn’t grade short answer or essay questions.
6. Concerns about a test/quiz can be discussed privately after the assessment period has closed.
7. No make-up tests or quizzes will be given, unless the student made previous arrangements with the instructor or has an excused absence. Unexcused absences will receive a zero.
8. See the **UF Student Honor Code** below and report suspicious behavior.
9. Grades cannot be provided over the telephone or by email, but will be available on Sakai in the Gradebook.

**ENY5516: Turfgrass and Ornamental Entomology  
Spring 2012**

<b>Date</b>	<b>Lecture #</b>	<b>Topic / Learning Experience</b>	<b>Reading</b>
<b>Part I. General Entomology</b>			
<b>Week 1</b> Jan 9	1	Introduction, how insects become pests	Insect dispersal; Regul. pest management; Globalization & pest ...
	2	External and internal insect morphology	Pgs. 21-47 in Insect Structure & Function
	3	Growth and development of insects	
<b>Week 2</b> Jan 16	4	<i>Martin Luther King Jr. Day – no lecture today</i>	
	5	Arthropod relatives <b>QUIZ 1</b>	Pgs. 248-9, 261-262 in Pests In & Around the FL Home
	6	Insect orders	List of important orders
<b>Week 3</b> Jan 23		Insect collection and preservation	Collecting & Preserving
<b>Part II. Integrated Pest Management</b>			
	7	Integrated pest management	Pgs. 235-237 in Pests In & Around the FL Home
	8	Monitoring / sampling techniques <b>QUIZ 2</b>	Pgs. 134-141 in Floric. & Nurseries; Surveillance & sampling
<b>Week 4</b> Jan 30	9	Insect communication	
	10	Host plant selection and indirect plant defense	Chemosensory bases of host plant selection; Indirect defense via tritrophic interactions; Wikipedia website given on last slide
	11	Plant resistance to insects	Managing insects with resistant plants; Effects of N fertilization ...
<b>Week 5</b> Feb 6	12	Cultural and mechanical controls	
		<b>TEST 1</b> (lectures 1-12)	
	13	Biological control concepts	Pgs. 44-47 in Insect Structure and Function
<b>Week 6</b> Feb 13	14	Identification of common predators and parasitoids	
	15	Introduction to insecticides	Introduction to safe pesticide handling
	16	Insecticide chemical classes and modes of action <b>QUIZ 3</b>	
<b>Week 7</b>	17	Insecticide formulations, toxicity and spill	

Feb 20		management <b>FEATURED CREATURE TOPIC DUE 02/20</b>	
	18	Natural insecticides	Microbial insecticides
	19	Insecticide application technologies	
<b>Part III. ID &amp; Biology of Common Arthropod Pests</b>			
<b>Week 8</b> Feb 27	20	Tree and shrub pests: borers <b>QUIZ 4</b>	Pgs. 267-270 in Pests In & Around the FL Home
	21	Tree and shrub pests: defoliators	Pgs. 250-262 in Pests In & Around the FL Home
	22	Tree and shrub pests: leafminers and gall makers	Pgs. 263-266 in Pests In & Around the FL Home
<b>Week 9</b> <b>Mar. 5-9</b>		<b>Spring Break – No Lectures</b>	
<b>Week 10</b> Mar. 12	23	Tree and shrub pests: sucking pests	Pgs. 238-249 in Pests In & Around the FL Home
	24	Greenhouse, floricultural, and houseplant pests	Pgs. 271-273 in Pests In & Around the FL Home
		<b>Test 2</b> (lectures 13-24)	
<b>Week 11</b> Mar. 19	25	Arthropod pests of palms	
	26	Arthropod pests of conifers <b>FEATURED CREATURE</b> <b>1<sup>ST</sup> DRAFT DUE 03/19 by 4:00 pm</b>	
	27	Arthropod pests of subtropical shrubs <b>QUIZ 5</b>	
<b>Week 12</b> Mar 26	28	Arthropod pests of groundcovers, ornamental grasses, and flower beds	
	29	IPM in turfgrass	Pgs. 207-228 in Pests In & Around the FL Home
	30	Turfgrass pests: foliage feeders <b>QUIZ 6</b>	
<b>Week 13</b> Apr. 2	31	Turfgrass pests: stem and thatch feeders	Insecticide reduction on lawns
	32	Turfgrass pests: root feeders	Pgs. 271-273 in Pests In & Around the FL Home
	33	Nuisance and vertebrate pests <b>QUIZ 7</b>	Pgs. 287-293, 304-312 in Pests In & Around the FL Home
<b>Week 14</b> Apr. 9	34	Stinging and biting pests <b>FINAL FEATURED CREATURE DRAFT</b> <b>DUE 04/9 by 4:00 pm</b>	Pgs. 93-106, 229-232 in Pests In & Around the FL Home; Pgs. 64-65, 86-90 in Caterpillars of Eastern Forests
	35	Butterfly gardening and attracting insects	FL Wildflowers & Butterflies
	36	To be determined <i>Complete online course evaluation for extra credit</i>	

<b>Week 15</b> Apr. 16	37	Virtual field trip to different turfgrass sites <b>QUIZ 8</b>	
	38	Virtual field trip to different ornamental plant sites <b>INSECT COLLECTIONS</b> <b>DUE 04/18/12 BY 4:00 PM</b>	
<b>Week 16</b> Apr. 23		<b>TEST 3</b> (lectures 25-39; <i>no final exam</i> )	

**Required Readings for Graduate Students (no textbook required):**

Core readings (required for all students), graduate student articles, lecture outlines, and slides will be posted on the Sakai website. The file(s) can be downloaded and printed (e.g., at Kinkos or on your own printer) as a course packet.

Graduate students are required to read the following articles/publications and be prepared to discuss the importance of the information.

1. Loope, L.L., & F.G. Howarth. Globalization and pest invasion: where will we be in 5 yrs?
2. Pedigo, L.P. Surveillance and sampling.
3. Schoonhoven, L.M. Chemosensory bases of host plant selection.
4. Chen, Y., D.M. Olson, & J.R. Ruberson. Effects of N fertilization on tritrophic interactions.
5. Herms, D. and W. Mattson. Trees, stress, and pests.
6. Koehler, P. and R. Belmont. Introduction to safe pesticide handling.
7. Weinzierl, R., T. Henn, P.G. Koehler, and C.L. Tucker. Microbial insecticides.
8. Koehler, C.A. Symptomology in the instruction of landscape ornamentals entomology.
9. Buss, E.A., and P. Koehler. Insecticide reduction on lawns.

**Exams and Grading:**

Grades will be based on:

- 3 lecture exams (100 points each)
- 8 quizzes (20 points each)
- Insect collection (80 points)
- Featured Creature article (100 pts)

Total = 640 points

Grading Scale:

A	90 - 100%
B+	88 - 89%
B	80 - 87%
C+	78 - 79%
C	70 - 77%
D+	68 - 69%
D	60 - 67%
E	< 60%

The UF Grading Policy is at: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>.

**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.

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://www.at.ufl.edu/~turnitin/about.html>). 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.

## **Academic Honesty, Software Use, UF Counseling Services, Services for Students with Disabilities**

In 1995 the UF student body enacted an honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

**The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.**

On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean or Student Honor Court. (Source: 2010-2011 Undergraduate Catalog)

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor. This policy will be vigorously upheld at all times in this course.

### **Software Use:**

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing 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.

### **Campus Helping Resources:**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)

- Counseling Services
- Groups and Workshops
- Outreach and Consultation
- Self-Help Library
- Training Programs
- Community Provider Database

Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)

### **Students with Disabilities:**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)