

# ENY 4573

## Beekeeping

### Spring 2013

**Instructor:** Jamie Ellis, PhD

**Office Room #:** ENY building (Bldg 970), room 3207

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**Office Hours:** Due to Dr. Ellis' travel schedule, office hours and phone meetings are available only by email appointment. The Entomology and Nematology building is named Charles Steinmetz Hall or Building 970 on the campus map (<http://campusmap.ufl.edu/>).

**Course Description:** The biology of honey bees and the craft of apiculture will be examined by exploring the natural history, biogeography and ecology of honey bees. Honey bee anatomy, physiology, colony social structure, pests/diseases, pollination ecology, management and current topics in beekeeping will be discussed.

**Additional Information Regarding the Course:** This course contains significant scientific content. If you are unsure of any vocabulary terms or scientific practices, please take the time to research them. It will be easy to fall behind if you do not understand the content. A basic biology prerequisite is recommended, though not required.

#### **Course Objectives:**

1. Compare the natural histories of honey bees with those of other bees, emphasizing the development of sociality in bee hymenoptera.
2. Examine the diversity and biogeography of honey bees.
3. Discover the intricacies of honey bee biology, anatomy, physiology.
4. Determine the contributions of nest structure, eusocial behavior, and colony superorganismic traits to the success of honey bees globally.
5. Appraise the history, development, and practice of apiculture.
6. Associate apiculture with production agriculture, ecosystem health, and human success.
7. Synthesize transcending topics (such as parasitology, invasive species biology, IPM, etc.) using apiculture as a model.

\*\*This course is co-taught with EYN 5572: Apiculture.

#### **Recommended Texts (not required):**

1. Caron, D.W. 1999. Honey Bee Biology and Beekeeping. Wicwas Press. Cheshire, CT, 356 pp.
2. Delaplane, K.S. 2006. Honey Bees and Beekeeping: A Year in the Life of an Apiary, 3<sup>rd</sup> Edition. The Georgia Center for Continuing Education, Athens, GA, 108 pp.

**Lectures:** This is an online, Sakai-based course. The website for the SYLLABUS, ALL LECTURES, READING MATERIALS, ANNOUNCEMENTS, TESTS, ETC. will be posted on eLearning: <http://lss.at.ufl.edu>. All lectures

for this course are narrated presentations and may include some videos and/or supplemental reading. Any material posted online (including any posted manuscripts) may be included in the tests, even if I do not cover the material specifically in my narrated presentations. Not all information covered during the narrated presentations will exist as printed material on lecture slides. Therefore, you should pay close attention to the narrated lectures as knowing the spoken information is critical for success in this course. All lectures and tests will be delivered online in Sakai! There will be no classroom lecture meetings.

Throughout the course you will view video and Flash course lectures. Please understand that many of these video clips and photographs are copyrighted and are NOT to be used outside of this class and only may be used for this semester. Please do not copy or distribute these photographs or video clips.

**Evaluation:** The course grade is based on total points earned (out of 350 possible points).

-Test 1	100 pts
-Test 2	100 pts
-Test 3	100 pts
-Written Report	50 pts

Total Points:    ENY 4573        350 pts

\*For additional information on the University of Florida’s grading policy, see:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

FINAL GRADING		
% grade	Letter grade	Points needed to achieve letter grade
100-93	A	≥326
90-92	A-	315-325
87-89	B+	305-314
83-86	B	291-304
80-82	B-	280-290
77-79	C+	270-279
73-76	C	256-269
70-72	C-	245-255
67-69	D+	235-244
63-66	D	221-234
60-62	D-	210-220
0-59	E	0-209

**Course Schedule:** Since this course is offered via Sakai as a distance education course, students may work at their own pace. However, students are expected to complete chapters 1-8 by the first test, chapters 1-16 by the second test, and 1-24 by the third test. All tests are cumulative. Test III is the “final” and will be administered during finals week.

Week	Date	Topics Covered and Assignment/Test Date
Week 1	7-11 Jan	Lecture 1. An Introduction to the Hymenopterans and Bees Lecture 2. Sociality and Honey Bees
Week 2	14-18 Jan	Lecture 3. Biogeography of Honey Bees Lecture 4. Honey Bee Anatomy
Week 3	21-25 Jan	Lecture 5. Honey Bee Physiology Lecture 6. Nutrition and Immune Response
Week 4	28 Jan – 1 Feb	Lecture 7. Honey Bee Biology
Week 5	4-8 Feb	Lecture 8: Honey Bee Colonies as a Superorganism Test I (Lectures 1 – 8): 6-7 February 2013
Week 6	11-15 Feb	Lecture 9: The History of Beekeeping Lecture 10: Beekeeping Equipment Field Day at UF Bee Biology Unit – 16 February 2013
Week 7	18-22 Feb	Lecture 11: Getting Started in Beekeeping Lecture 12: Pests and Predators of Honey Bees
Week 8	25 Feb – 1 Mar	Lecture 13: Pathogens and Diseases of Honey Bees Lecture 14: Integrated Pest Management in Apiculture
Week 9	4-8 Mar	SPRING BREAK (and UF Bee College)
Week 10	11-15 Mar	Lecture 15: Yearly Beekeeping Management I: April – August Lecture 16. Yearly Beekeeping Management II: September – March Test II (Lectures 1 – 16): 17-18 March 2013
Week 11	18-22 Mar	Lecture 17. History and Theory of Honey Production Lecture 18. Other Products of the Hive
Week 12	25-29 Mar	Lecture 19. Bee Botany Lecture 20. Pollination Ecology
Week 14	1-5 Apr	Lecture 21. Queen and Packaged Bee Production BEEKEEPING REPORTS DUE – 1 April 2013
Week 15	8-12 Apr	Lecture 22. African Honey Bees
Week 16	15-19 Apr	Lecture 23. Colony Collapse Disorder (CCD) Lecture 24. Research and Extension Efforts in Apiculture
Week 17	22-26 April	Test III (Final Test – all Lectures): 21 – 22 April 2013

**Tests:** There will be three, 100 point tests during the semester. Tests will be true/false and multiple choice and will be taken electronically. All tests are cumulative and will be offered online through Sakai. **Tests will be timed (75 minutes allowed) and administered on set dates.** You should take every opportunity to adhere to the suggested chapter review timeline above so that you are prepared for the tests. There is a large bank of test questions for each test and the test questions are selected randomly for each student. You must log in to take the test within the 24 hour period given below for each test. Once you begin the test, it must be submitted within 75 minutes. **All test times are given in Eastern Time.**

	Test Opens	Test Closes
Test 1:	12:00 pm ET 6 February	12:00 pm ET 7 February
Test 2:	12:00 pm ET 17 March	12:00 pm ET 18 March
Test 3:	12:00 pm ET 21 April	12:00 pm ET 22 April

**You need to read the syllabus and answer 3 questions on Sakai by 14 January 2013.** This will show you how your online tests will be formatted. Please make an appointment to see me as soon as possible if you are uncomfortable with online lectures, tests and assignments. Go to Tests & Quizzes on the left of the main page to take this short quiz.

**Beekeeping Report:** One of the most useful skills in any profession is writing. As such, you are expected to produce a 4-5 page (max!!!) written report (12 point, Times New Roman font, double spaced) by participating in one of the following 2 activities:

1) You can shadow a beekeeper and write report on his/her beekeeping operation. You can discuss how the operation is managed, what the purpose of the operation is (pollination, honey production, etc.), key obstacles the beekeeper has to overcome in his/her operation, etc. Your visit with the beekeeper should be photo-documented (you can include photos as figures in the report, though they must be in addition to the 4-5 pages of text). Please contact the Instructor if you need help finding a local beekeeper in your area. Furthermore, please let the instructor know if you choose this option.

2) You can attend the Honey Bees and Beekeeping Field Day hosted at the University of Florida Honey Bee Biology Unit in Gainesville, FL. On 16 February 2013 (Saturday), we will host a field day during which students will construct beekeeping equipment, work live honey bee colonies, extract honey, etc. The laboratory will begin at 9:00 am and conclude at 3:00 pm (pizza lunch provided). Participants must wear socks and close-toed shoes. Following the Field Day, students must write a 4-5 page report on their experience with honey bees and beekeeping during the event. **Students planning on attending the field day must contact Dr. Ellis by 8 February 2013 to register for a spot.** Once registered, a map and driving directions to the UF Bee Biology Unit will be provided.

**(1) Grammar/report presentation and (2) knowledge of beekeeping are both worth 50% of the report grade. A grading rubric will be provided to facilitate development of the beekeeping report. Reports not submitted by the due date (1 April 2013; 5:00 pm ET) will incur a 10% grade penalty for every day the report is late, regardless of the excuse. Please do not wait until the last minute to produce your report.**

**Make-up Policy: There will be no make-up for tests or other assignments missed without prior approval from the instructor.** If you would like to take your test on a day **prior** to the listed test date, please contact your instructor at **least one week in advance**. Tests can be taken in advance of the scheduled date only under special circumstances. **You will not be allowed to take the test after the assigned test date.** If you are ill, you need to contact the instructor before the test. A doctor or infirmary must confirm illness before you may schedule a make-up test. You will be required to provide appropriate written documentation to make up a missed examination (e.g., from a doctor in case of severe illness or a funeral notice or obituary in the unfortunate event of the death of a close relative). **Unexcused, missed tests will result in a grade assignment of 0.**

**Class Attendance:** This is a distance education course so attendance is not required.

**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".

***We, the members of the University of Florida, pledge to hold ourselves and peers to the highest standards of honesty and integrity.***

**UF 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:

1. University Counseling Center, 3190 Radio Road, 392-1575 personal and career counseling
2. Student Mental Health, Student Health Care Center, 392-1171, personal counseling
3. Sexual Assault Recovery Services, Student Health Center, 392-1161, sexual counseling
4. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling

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

**UF Policy on E-mail:** “Official University business email will be communicated to students using the University GatorLink email account. That is, official email will be sent exclusively to GatorLinkUserName@ufl.edu. The preferred email address recorded for all students will be the GatorLink address. This is the email address displayed in the online phonebook. Students may continue to use the forwarding mechanism to deliver their email to other mail services, if they wish. However, it is the student’s responsibility to insure that the forwarding address is current so that they receive official communications from the University”.

**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 damage and/or criminal penalties for the individual violator. Because such violations are against University policies and rules, disciplinary action will be taken, as appropriate.

**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/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 <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.