

ENY 4004C/5006C ENTOMOLOGY: FALL 2014

Professor: Dr. Hojun Song (song@ucf.edu)
Office: BL 441, Phone: 823-0675 (emergency only)
Office Hours: by appointment only

GTA: Derek A. Woller (dwoller@knights.ucf.edu)
Office: BL 442, Phone: 823-4003

Lecture: BL 105, Mon & Wed 8:30am – 9:20am

Lab: BL 105, Mon & Wed 9:30am – 12:50pm

Course Description: The goal of this course is to provide you with a general introduction to the field of entomology, covering a wide range of topics including morphology, physiology, insect diversity, and various subdisciplines within entomology. The laboratory work will include hands-on exercises in insect anatomy and insect classification as well as a number of field trips. A collection is required that will further refine your ability to collect using a number of field techniques and to properly prepare and identify insects to the level of order and family.

Course Prerequisites: BSC 2010 (Biology I) AND BSC 2011 (Biology II), or similar introductory biology courses

Required Textbook:

Johnson, N.F. & Triplehorn, C.A. 2004. *Introduction to the Study of Insects*, 7th Edition. Cengage Learning.

* For some lectures, there will be additional readings, which will be available in the website.

Canvas@UCF: This course is a web-enhanced class. Lecture notes, announcements, and lab assignments are posted on Canvas@UCF. Use your NID and myUCF password to log in to Webcourses@UCF.

Grading: You will receive one grade that combines your total points from lecture and laboratory. Exam scores will be posted on myUCF grades and no grades will be given over the phone or by email according to Federal law (FERPA regulations). The grading scale will be: A=90-100, B=80-89, C=70-79, D=60-69, F=below 60. There will be no pluses/minuses in this course, but the final grade will be rounded up if it is less than 1% from the next grade up (e.g. 89.1~89.9 will be rounded up to A). Your grade will be calculated as follows:

Lecture Exam 1:	15%
Lecture Exam 2:	15%
Lecture Final:	20%
Lab Practical:	15%
Preliminary Collection:	10%
Final Insect Collection:	20%
Insect Rearing:	5%
<hr/>	
	100%

Course Schedule:

Wk.	Date	Lec #	Lecture topic	Reading	Lab
1	8/18	1	Introduction to entomology	Ch. 1, 35	Overview of lab requirement, basics of insect collecting, curatorial techniques (UCF Arboretum Natural Area)
	8/20	2	Basics of insect morphology and terminology	Ch. 3, 6, 7, 8	Tour of Bug Closet
2	8/25	3	Insect classification and phylogenetics; non-insect hexapods & lower insects	Ch. 9, 10	Lab Exercise I: Insect diversity lab I (non-insect hexapods and lower insects)
	8/27	4	"Palaeoptera" (Odonata and Ephemeroptera)	Ch. 13, 14, 15, 16, 17, 18	Field trip (UCF East Parcell) and specimen preparation
3	9/1	-	No class - Labor Day		No class - Labor Day
	9/3	5	Polyneoptera I (Plecoptera, Dermaptera, Embioptera, Zoraptera, Grylloblattodea, Mantophasmatodea)	Ch. 11, 12, 19, 20, 21	Lab Exercise II: Insect diversity lab II (Polyneoptera)
4	9/8	6	Polyneoptera II (Orthoptera, Phasmatodea, Dictyoptera)	Ch. 22, 23, 24, 25	Field trip (Chuluota Wilderness Area), set-up traps and specimen preparation
	9/10	7	Paraneoptera (Psocodea, Thysanoptera, Hemiptera)	Ch. 26, 27, 33	Lab Exercise III: Insect diversity lab III (Paraneoptera)
5	9/15	8	Holometabola I (Neuropterida, Strepsiptera, Coleoptera)	Ch. 32, 33, 34	Lab Exercise IV: Insect diversity lab IV (Holometabola I)
	9/17	9	Holometabola II (Diptera, Mecoptera, Siphonaptera)	Ch. 28, 29, 30	Field trip (Econ River Wilderness Area), aquatic sampling and specimen preparation
6	9/22	10	Holometabola III (Trichoptera, Lepidoptera, Hymenoptera)		Lab Exercise V: Insect diversity lab V (Holometabola II)
	9/24	-	Exam 1	Ch. 1, suppl.reading	Lab Exercise VI: Insect diversity lab VI (Holometabola III)
7	9/29	11	External anatomy I (cuticle, segmentation, tagmosis, head)	Ch. 1, suppl.reading	Field trip (location TBD) and specimen preparation
	10/1	12	External anatomy II (thorax [leg, wing], abdomen)	Ch. 1, suppl.reading	Lab Exercise VII: External anatomy of insects
8	10/6	13	External anatomy III (comparative morphology, locomotion)	Ch. 1, suppl.reading	Specimen preparation and identification
	10/8	14	Internal anatomy I (muscular, nervous, endocrine, circulatory, respiratory system)	Ch. 1, suppl.reading	Lab Exercise VIII: Internal anatomy of insects
9	10/13	15	Internal anatomy II (digestive, excretory, reproductive system)	Ch. 1, suppl.reading	Field trip (location TBD) and specimen preparation
	10/15	16	Sensory systems (vision, chemical, acoustic)	Ch. 1, suppl.reading	Lab Exercise IX: Sensory/behavior; Preliminary insect collection due (12pm)
10	10/20	17	Insect development (metamorphosis)	Ch. 1, suppl.reading	Field trip (location TBD) and specimen preparation
	10/22	-	Exam 2		Specimen preparation and identification
11	10/27	18	Insect reproduction	Ch. 2, suppl.reading	Lab open for studying for lab practical
	10/29	19	Insect-plant interaction	Ch. 2, suppl.reading	Lab Practical
12	11/3	20	Insect ecology	Ch. 2, suppl.reading	Field trip (location TBD) and specimen preparation
	11/5	21	Insect defensive system	Suppl. Reading	Specimen preparation and identification

Wk.	Date	Lec #	Lecture topic	Reading	Lab
13	11/10	22	Social insects	Suppl. Reading	Field trip (location TBD) and specimen preparation
	11/12	23	Medical/veternary/forensic entomology	Suppl. Reading	Specimen preparation and identification
14	11/17	-	No class - Song in conference		No formal lab; lab open for specimen prep & identification
	11/19	-	No class - Song in conference		Final insect collection due (12pm)
15	11/24	24	Cultural entomology (guest lecture)	Suppl. Reading	Entomophagy exercise
	11/26	-	Final Exam		No lab

Lecture Exams: Exams 1, 2 and Final Exam will be given during regular class period. **Final exam is scheduled on November 26 (Wed).** Lecture exams will include multiple-choice, short-answer, fill-in-the-blank, and short-essay questions. You are responsible for the materials presented in the lectures. Exam I will cover lectures 1 to 10, focusing on insect classification and phylogeny. Exam II will cover lectures 11 to 17, focusing on insect anatomy & physiology, development and reproduction. The final will be semi-comprehensive with ~30% of the material coming from lectures 18 to 24, with the remaining ~70% from the material covered in exams 1 and 2.

Lab Practical: There will be 9 hands-on laboratory exercises, which will be the basis for the lab practical. You are responsible for identifying specific structures and functions of different morphological features based on dissected specimens. You are also responsible for identifying various insect specimens to family and order levels. There will be an open lab prior to the lab Practical in which you will have a chance to examine specimens under microscopes.

Insect Collection: Creating your own insect collection is an excellent way to learn insect morphology and diversity and, thus, in this course, you are required to make an insect collection, which represents 30% of your grade (10% for preliminary collection, 20% for final collection). You are responsible for collecting, preparing, labeling, and identifying specimens. All necessary equipment will be provided during the first lab. *You will need to collect and identify 16 orders and 65 families.* A tremendous amount of time and effort is needed to create a well-curated collection and you **CANNOT** complete a collection at the last minute! To help you progress, I have set up a deadline for turning in a preliminary collection: **October 15th at 12pm.** More specific guidelines for creating your collection will be given to you as a separate handout in the first lab. The final insect collection is due on **November 19 at 12pm.**

Insect Rearing: Rearing an insect from a hatchling to adult is a very good way to learn about its biology and life history. You will be supplied with one newly emerged nymph (1st instar) of *Schistocerca americana* at the beginning of semester. Your task is to keep it alive until it metamorphoses into an adult and document its growth for 5% of your grade. We will provide you with more details later.

Field Trips: In order to fully expose you to various habitats that insects live in, we will conduct several field trips during this course, which will take place during the regular lab period. When you are out collecting in the field, there are several creatures that can harm you, including ticks, chiggers, spiders, mosquitoes, biting flies, snakes, and other poisonous plants, and, thus, I

suggest you dress properly. Appropriate field dress includes shoes (hiking shoes or tennis shoes, but no sandals or flip-flops), long pants, and a hat. Insect repellent and sunscreen are also recommended for these trips along with snacks and water.

Attendance: Students are responsible for all material presented and discussed in class. In the case of a missed class, students are advised to obtain lecture notes and handouts from classmates unless there is a good reason, in which case I will be happy to help. Lecture exams will be given during class time. Make-up exams for exams 1 and 2 will be provided only for students who must miss the exam due to official University business at which your presence was required (e.g. a university-sponsored team event). Hard-copy documentation must be provided 48 hours in advance from the appropriate university body. For all other cases (e.g., unforeseen emergencies) you must contact me as soon as reasonably possible and provide hard-copy documentation (a signed document from a doctor, police officer, judge etc. - not by e-mail). The absence must have been caused by a valid emergency as defined by UCF, including but not limited to: major illness, serious family emergency, jury duty, military obligation, etc. There will not be a make-up for the lab practical. If you must miss the lab practical due to legitimate reasons listed above, your grade for the insect collection will be used to replace the missed lab practical. All students are required to take the final exam, and there will be NO make-up exams for the final.

Attendance Requirement for Financial Aid: As of Fall 2014, all faculty members are required to document students' academic activity at the beginning of each course. In order to document that you began this course, I will take attendance for the first two weeks of classes. Failure to attend will result in a delay in the disbursement of your financial aid.

Classroom Conduct: By enrolling at UCF, all students have agreed to abide by the Golden Rule. Please become familiar with this document at: <http://www.goldenrule.sdes.ucf.edu>. All students are expected to act maturely in the classroom and show consideration for their peers and the instructor. Please use common courtesy in class by arriving and departing on time and by not snoring or talking during class. Turn off cell phones and other electronic devices. Any student who consistently distracts other students or the instructor will be removed from the course. *Cheating on exams or other assignments including insect collection and literature review will not be tolerated.* Any person caught copying another paper, signing in for someone else, attempting to steal part or all of an exam, plagiarizing, or cheating in any other way will receive zero points for the course and the matter will immediately be referred to the UCF Office of Student Conduct for disciplinary action.

Disability Access Statement: The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students with disabilities who need accommodations in this course must contact the instructor at the beginning of the semester to discuss needed accommodations. No accommodations will be provided until the student has met with the instructor to request accommodations. Students who need accommodations must be registered with Student Disability Services, Student Resource Center Room 132, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the instructor.

Final Note: It is likely that the field collecting may be affected by weather conditions, and, thus, we will keep the lab schedule flexible. These changes will be announced in lecture.