

Entomology 689

Insect Biodiversity and Biology

Basic Course Information

Instructor: Dr. John D. Oswald, Associate Professor & Curator, Department of Entomology

Office: 216A Heep Center (inside Heep 216, the Insect Collection room)

Contacts: j-oswald@tamu.edu; 979-862-3507 (office phone); 979-845-6305 (fax)

Office Hours: M 12:30 to 1:45 (216A Heep Center)

689 Lecture: MWF 11:30 to 12:20 (205 Heep Center)

689 Lab: M 1:50 to 4:30 (205 Heep Center)

Lab Room: 205 Heep Center

Lab TA: TBA

Required Text: Borror, D. J.; Triplehorn, C. A.; Johnson, N. F. 2004. *An Introduction to the Study of Insects*. 7th Edition. Saunders College Publishing, Philadelphia.
(Campus Bookstore Prices: \$000.00 new; \$00.00 used)

Optional Text: Castner, J. L. *Photographic Atlas of Entomology and Guide to Insect Identification*. Feline Press. (I will say more about this book in class.)

Web Sites: Entomology 689: (in preparation)

Tiara Biodiversity Project: <http://www.csdl.tamu.edu/tiara/>

Optional: Lecture Outlines (Synoptic outlines of 689 lectures. I strongly recommend that you look at these outlines as a way to organize your lecture notes. Each outline can be printed -- or copied and pasted as a digital text file -- as needed from the ENTO 689 web site)

Lecture Overhead Packet (Copies of overheads used in 689 lecture [ca. 250 pages]. I strongly recommend these as visual aids to help you learn the many terms and morphological features that we will cover in this course. The extensive set of ca. 750 figures contained on the overheads is particularly useful for taking notes in lab, and they will save you a lot of time drawing. The overhead packet can be obtained at Copy Corner for ca. \$10-\$15, including a "spiral" binding. Because of copyright restrictions on the figures, you must copy this packet of material yourself from the original at Copy Corner (ask for the ENTO 689 packet). Copy Corner is not legally allowed to copy these pages for you, although they can put a binding on a set that you copy (which is highly recommended!). Also because of copyright restrictions, this material cannot be placed on the 689 web site. Sorry!, but I have looked into this topic thoroughly.

Habitat Guide (A list of all of the ENTO 689 insect families that occur in America north of Mexico, which ones are found in Texas, and general information on where to find them and how to collect them. This document contains some subtle shading in a large table, so it doesn't photocopy well. You should download a copy of the pdf version of this file from the ENTO 689 website.)

Prerequisites: 6 hours of biological sciences

Corequisites: None

Course Emphases

LECTURE

- Insect classification, diagnostic characters and taxon names
- Insect biologies, life histories, behaviors, habitats, etc.

LAB

- Insect identification (by “sight” and by “key”)
- Diagnostic traits of selected non-holometabolous insect families
- Insect collecting methods and techniques
- Insect preserving, mounting and labeling methods and techniques

Course Objectives -- After completing this class you should:

- be able to sight identify all insect orders and approximately 120 North American families
- be able to key to family most North American insects
- be able to characterize each order and know the diagnostic traits of each family
- know the basic biologies of approx. 120 North American families
- know in general where to find these families in the field, and the most appropriate method(s) to use to collect them
- be able to properly preserve and prepare insects for scientific study and voucher documentation

Grading Point System

	points	points	%	%
Lecture Exams	300		40	
Exams (best 2 of 3 @ 75 points each)		150		20
Lecture Final (comprehensive)		150		20
Lab Exams	250		34	
Quizzes (10 @ 5 points each)		50		6
Exams (2 @ 50 points each)		100		14
Lab Final (comprehensive)		100		14
Insect Collection	190		26	
Preview Collection		30		4
Final Collection		*160		22
	740 =	740	100 =	100

* The Final Collection is open-ended – there is no fixed maximum point value for it. Above, I have used a “Standard” collection score of 160 points to calculate its approximate grade percentage. For detailed information on how collection points are calculated see the Collection Grading Sheet (Collection Guide, page 15).

Letter Grades*

A (90-100%); B (80-<90%); C (70-<80%); D (60-<70%); F (<60%)

* Students meeting these percentiles are guaranteed the indicated grade. The instructor, however, reserves the right to lower the percentiles required to achieve each grade.

Exams

- Regular semester exams will emphasize previously untested material – that is, although they are not intended to be fully comprehensive, they may contain minor elements from previously tested material.
- Finals will be comprehensive.
- Lab material may, but will not typically, be tested in lecture exams, and vice versa.
- Make-up exams will be possible only under very exceptional circumstances.
- Several sample lecture exams are posted on the 689 web site. Use these to see the kinds of questions will be on the exams. Typical questions will be: fill-in-the-blank, short answer, essay, essay correction, labeling and diagramming.
- Lab exam emphasis will be on sight identification, keying and structure and function recognition.
- Lab quizzes will consist of five questions emphasizing identification and structure and function recognition

Attendance Policy

- I will call roll until I learn the names of all the students in the class. Attendance in lecture and lab is strongly encouraged. The course moves at a rapid pace and failure to attend lectures and labs will cause one to fall rapidly behind.
- There is no assigned seating. However, I would appreciate it if you would sit in the same place for the first several week until I get to know your names.

NetHead Awards

- The prestigious Entomology 689 NetHead Award is given for the top lab performances of the semester. The NetHead goes to the student who accumulates the most total points for all components of the lab (lab quizzes, lab exams, lab final, preview collection, final collection). The winner will receive a Bio-Quip "Professional Series" insect net in a suitable "head-dunking" ceremony at the end of the semester! The competition is tough. You've got to be competitive on the exams – but the collection is open-ended, so you can make up a lot lost ground on the exams with a stellar collection. Give it a shot!

Americans with Disabilities Act (ADA) Policy Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 126 of the Koldus Building or call 845-1637.

Academic Integrity Statement

“An Aggie does not lie, cheat, or steal or tolerate those who do.” For more on the Aggie Honor Code, link to: <http://www.tamu.edu/aggiehonor>.

The above schedules and procedures are subject to change in the event of extenuating circumstances.

Entomology 689
Insect Biodiversity and Biology

Lecture Schedule*

JANUARY

week	days	lecs	topics
1	19-21	1-2	(WF) Introduction to course; Protura, Collembola, Diplura, Microcoryphia
2	24-28	3-5	(MWF) Thysanura, Ephemeroptera, Odonata, Grylloblattaria, Phasmida
3	31	6	(M) Orthoptera

FEBRUARY

3	2-4	7-8	(WF) Mantodea, Blattaria, Isoptera; Exam I
4	7-11	9-11	(MWF) Dermaptera, Embiidina, Plecotpera, Zoraptera, Psocoptera, Phthiraptera
5	14-18	12-14	(MWF) Hemiptera I-III
6	21-25	15-17	(MWF) ; Exam II
7	28	18	(M) Thysanoptera

MARCH

7	2-4	19-20	(WF) Homoptera
8	7-11	21-23	(MWF) Coleoptera I-III; Exam III
9	14-18	--	(MWF) Spring Break – No class
10	21-25	24-26	(MWF) Coleoptera IV-VI
11	28-30	27-28	(MW) Neuroptera (s. lat.), Hymenoptera I-II

APRIL

11	1	29	(F) Hymenoptera III
12	4-8	30-32	(MWF) Hymenoptera IV-V, Trichoptera I; Exam IV
13	11-15	33-35	(MWF) Trichoptera II, Lepidoptera I-II
14	18-22	36-38	(MWF) Lepidoptera III-IV, Siphonaptera
15	25-29	39-41	(MWF) Mecoptera, Strepsiptera, Diptera I-II

MAY

2	42	(M) Diptera III-IV
3	43	(U) Diptera V; Last Day of Lecture
4	--	(W) Reading Day; No Lecture or Lab
10?	--	(T) Final Exam

Entomology 689

Insect Biodiversity and Biology

Laboratory Schedule*

January

- 24 M Lab 1 **Topics:** Introduction, Lab Equipment, Morphology Review, Keys and Keying
Taxa: Protura, Collembola, Diplura, Microcoryphia, Thysanura
- 31 M Lab 2 **Quiz 1** (on lab 1); **Topics:** Lab Kits, Collecting Methods, Pinning and Pointing
Taxa: Ephemeroptera, Odonata, Grylloblattaria, Phasmida, Grylloblattaria, Phasmida

February

- 7 M Lab 3 **Quiz 2** (on lab 2); **Topics:** Spreading, Slide Making, Label Making
Taxa: Orthoptera, Mantodea, Blattaria, Isoptera
- 14 M Lab 4 **Quiz 3** (on lab 3); **Taxa:** Dermaptera, Embiidina, Plecoptera, Zoraptera, Psocoptera, Phthiraptera
- 21 M Lab 5 **Lab Exam I** (covers Labs 1-4)
- 28 M Lab 6 **Quiz 4** (on lab 4); **Taxa:** Hemiptera, Thysanoptera, Homoptera; **Preview Collection Due**

March

- 7 M Lab 7 **Quiz 5** (on lab 6); **Taxa:** Coleoptera
- 14 M ----- **Spring Break – No class**
- 21 M Lab 8 **Quiz 6** (on lab 7); **Taxa:** Coleoptera, Neuroptera
- 28 M Lab 9 **Lab Exam II** (covers Labs 6-8)

April

- 4 M Lab 10 **Quiz 7** (on lab 8); **Taxa:** Hymenoptera
- 11 M Lab 11 **Quiz 8** (on lab 10); **Taxa:** Trichoptera, Lepidoptera
- 18 M Lab 12 **Quiz 9** (on lab 11); **Taxa:** Siphonaptera, Mecoptera, Strepsiptera
- 25 M Lab 13 **Quiz 10** (on lab 12); **Taxa:** Diptera

May

- 2 M Lab 14 **Final Lab Exam** (Comprehensive; approx. 50% on labs 1-8, 50% on labs 10-13)

Insect Collections Due (12:00 Noon in 210 Heep Center)

(A 10% penalty will be assessed for turning in your collection late.)

Lab Kit Returns Due (12:00 Noon in 210 Heep Center)

(!!NOTE!! Failure to clear the return of your Lab Kit materials with the Ento 301 TA before final grades are due at the registrar's office you will result in an Incomplete for the course.)

* Changes to this schedule may be required during the semester.