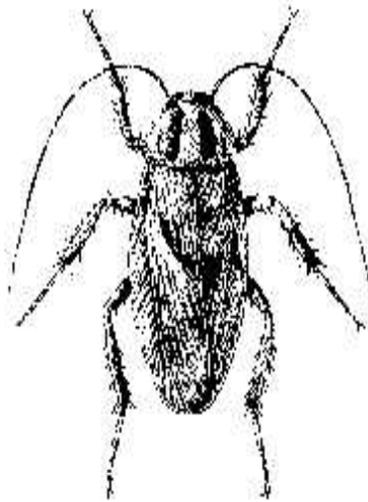


**Entomology 322-700**  
**Insects in Human Society**

**Spring 2014 (CRN 20363)**

**Dr. Roger E. Gold, Professor & Endowed Chair**

**Teaching Assistant:**  
**Cassie Schoenthal**



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**Entomology 322 – Insects in Human Society (Sec. 700)**  
**Spring 2014**

**Official Online Syllabus**

**Dr. Roger E. Gold, Professor & Endowed Chair**

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**Room 100 Center for Urban and Structural Entomology (Bldg. 1051)**  
**(on Agronomy across from the Vet School parking lot)**

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**Department of Entomology**

**Introduction to the Course**

This is a self-directed, introductory course on insects and related arthropods for non-entomology majors, which has set deadlines for assignments. Throughout the course, student will be introduced to examples of ways that arthropods are used to describe, explain, and predict natural phenomena which involves the use of the scientific method. The course deals with insects as resources for both food and other useful products, and also as competitors with humans and other animals. Insects are the most abundant and diverse multi-cellular life forms on earth, and their role in nature is essential for human existence. Insects have affected the development of human civilizations and cultures through impacts ranging from health, sanitation, food production and storage, to music, art and architecture. Arthropods are part of the human experience on planet Earth, and this course offers an overview of the historic, present day, and future roles of insects and other arthropods in affecting the culture of all countries and societies.

### Official Schedule - (CRN 20363)

Date	Lec. #	Topic
1/13/14	1	Start of course, overview & syllabus review
	2	Introduction to Insects & Scientific Method
	3	Classification of Insects & Other Arthropods (part A&B)
	4	Putting Order Into the Insect World (part A&B)
01/29/2014		<b>Quiz 1 – Covers lectures 1-4 – 10 points</b>
		Order videos 1-12 & Lecture Orders Collembola-Plecoptera
	5	Insect Museums and Collections
	6	Entomologist's Paraphernalia & Endangered Species
	7	Insect Structure & Function (Morphology) (part A&B)
	8	Insect Structure & Function-Internal (Physiology) (part A&B)
02/05/2014		<b>Quiz 2 – Covers lectures 5-8 – 10 points</b>
	9	Insect Metamorphosis & Growth (part A, B&C)
	10	Insects in Music, Literature & Poetry
	11	Insects in Literature & Poetry
		See video-exam 1 review
02/14/2014		<b>1<sup>st</sup> MAJOR EXAM (1-11 &amp; order videos 1-12) 100 points*</b>
		Order videos 13-21 & Lecture Orders Psocoptera-Hymenoptera
	12	Insect Reproduction & Behavior (sex, bugs & rock'n'roll)
	13	Insect Communications
	14	Insects as Models for Survival
	15	Insect Movement and Dispersal
02/26/2014		<b>Quiz 3 – Covers lectures 12-15 – 10 points</b>
	16	Insects That are Beneficial to Humans (part A,B,C, & D)
	17	Insects as Food (Entomophagy)
	18	Insects in Art & Cartoons
	19	Insects in Movies
03/05/2014		<b>Quiz 4 – Covers lectures 16-19 – 10 points</b>
		See video- exam 2 review
03/26/2014		<b>2nd MAJOR EXAM (12-19 &amp; order videos13-21) 100 Points*</b>
	20	Insect/Plant/Animal Interaction (parts A,B,C, D&E)
	21	Entomophobia, Delusory Parasitosis & Allergies
	22	Relationships of Insects to Human Disease (part A,B & C)
04/02/2014		<b>Quiz 5 – Covers lectures 20-22 – 10 points</b>
	23	Insect Population Dynamics
	24	Control of Insect Populations
	25	Integrated Pest Management
	26	Insects in a Green Society
	27	Forensic Entomology
04/16/2014		<b>Quiz 6 – Covers lectures 23, 25, &amp; 27 – 10 points</b>
		See video- exam 3 review
04/23/2014		<b>3rd MAJOR EXAM (20-27) 100 points*</b>
05/06/2014		<b>*OPTIONAL* COMPREHENSIVE FINAL 100 points**</b>

## ASSIGNMENT DUE DATES

Syllabus confirmation	01/22/2014	5 points
Writing Assignment 1	01/27/2014	10 points
Writing Assignment 2	02/03/2014	20 points
Writing Assignment 3	02/10/2014	30 points
Poem/Song	02/28/2014	15 points
Movie Review	03/21/2014	30 points
Taxonomic Puzzle	03/31/2014	30 points
Team Projects (Virtual Collecting Jar)	04/11/2014	100 points

## Goals of the Course

1. Students will be able to comprehend and evaluate the unique roles that insects have on planet Earth, and to define and comprehend the roles of this diverse life form, particularly as they relate to humans and their companion animals. They will learn the scientific methods used in Entomology, understand the steps involved, and demonstrate their abilities to differentiate between hypotheses, theories, and laws. Students will be able to synthesize this information and have the opportunity to increase their communication skills by developing technical writing skills.
2. Students will be able to comprehend the taxonomic processes used to collect, identify and organize at least 24 common insect orders and suborders. They will synthesize this information and learn about how to properly label and preserve these specimens.
3. Students will be able to demonstrate their abilities to comprehend and appreciate the influence that insects have had in defining the history of the world, and the role they have had in art, music and literature. Students will be able to recognize and define terms, phrases and concepts relating to the morphology, physiology and biology of various insect groups by matching characteristics taught in class with choices on examinations. Through comparing and contrasting, they will be able to evaluate insect structures as compared to human anatomy and behavior. Students will comprehend the concept of entomophagy as insects are discovered in prepared foods, and by discerning and categorizing different insect types and numbers found in common food items. They will be able to evaluate the importance of insects in human diets and make food choices based on the Food & Drug Administration's Defect Action Levels.
4. Students will comprehend, appreciate and demonstrate their knowledge of insects, and comprehend their role as potential vectors of pathogens of humans and livestock, and synthesize and discuss methods used to protect themselves from insect attack and invasion.
5. Students will discuss and synthesize ideas for the "integrated management" of insect populations, and compare and contrast historical chemical controls with current "best management practices".
6. Students will learn to work in teams to solve common challenges and demonstrate their abilities to provide an objective evaluation of their own, and other team members', participation on that team.
7. Students will learn and demonstrate their interests in improving academic performance by following directions, staying current with course work and assignments, participate in group discussions through eCampus, completing assignments on time, and by setting goals and time schedules for special assignments, extra credit opportunities, and required examinations. The examinations will require the use of both empirical and quantitative skills, as will the projects.

### **Course Format**

The course utilizes an online format through eCampus, and as such the students are expected to check eCampus for supplemental information about each topic covered in lectures. As an example, Orders of the Day are included in approximately 20 minute modules, which are required viewing to do well on the examinations and quizzes. The student must have access to eCampus. Log on is accomplished with your TAMU net ID and password. It is strongly recommended that the students utilize either Firefox (v 21), or Safari (v 6)(but NOT Google Chrome) as their internet browser.

### **Prerequisites**

Computer and internet access is required, and it is strongly advised that Firefox or Safari be used as your browser.

### **Requirements of the Course**

**The students** must have access to Texas A&M University eCampus through their own computer resources. All information, lectures, assignments, examinations, and communications will be done through eCampus, so plan accordingly. The student must use Firefox or Safari as their internet browser. It is the student's responsibility to have an internet connection via phone, wi-fi, or cable, and the use of a computer, or laptop.

**We are NOT responsible for technical difficulties.**

### **Notice about All Assignments**

All assignments must be submitted on time through eCampus! "On time" means by the time the project or assignment is due. It is the students' responsibility to submit the correct assignment on time. All work must be the original work of the student; cheating and plagiarism will not be tolerated. **Assignments must be submitted via eCampus on or before the day they are due.** All questions resulting from a disputed grade must be resolved within 7 days of its posting. If there are questions regarding the grade on any assignment, the student must communicate with the TA within 7 days of when the assignment is returned.

### **Confirmation of the Syllabus (5 points)**

Each student will be REQUIRED to complete the provided assessment in eCampus to confirm receipt and comprehension of the class syllabus. The assessment will consist of questions pertaining to the provided syllabus. Class expectations and rules will also be emphasized.

### **Examinations: 300 Possible Points**

There will be three (3) major examinations during the semester. Each major examination is worth 100 points and will cover the lectures (including videos of the Insect Orders) presented since the last examination (see schedule for details), and information from the syllabus. Examinations will include material from the 21 Order videos available on eCampus. If an Order is mentioned in a lecture, it can be included in the next examination.

Examinations will be completed on eCampus and will be timed. Students will have 1 hour (60 minutes) to complete the 75 question exams. If you fail to answer all questions, the unanswered ones will be counted as incorrect. Each exam is closed book and you are not allowed to use notes or other “help” devices or sources.

Note: There will be assignments to find, view, consider, and understand. There will also be references, or link to a specific website, article or video presentations which will supplement lecture topics. That information will be used as questions on the examinations and quizzes.

There is an optional, comprehensive final examination available for students who have missed an examination, or achieved a poor score on one of the major examinations. This comprehensive final exam is worth 100 points, and must be taken at the posted time of the final examination for the semester. The comprehensive final will be 150 questions. The score from this examination will be substituted for a missing examination, or for the lowest examination score during the semester. NOTE: the comprehensive final does NOT take the place of the required projects, or assignments due during the semester. **There are absolutely NO provisions for late, or make-up exams for the optional, comprehensive final.**

The Aggie Honor Code will be utilized and enforced in this class. The code is “On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work.” If a student is caught cheating on an examination or assignment, they will receive a score of “F” in the course, and will be reported to Aggie Honor System Office for academic dishonesty.

### **Quizzes (60 points)**

There will be 6 quizzes valued at 10 points per quiz assigned during the semester. All quizzes will be presented and answers submitted on eCampus. The quizzes will be timed and the student will have 15 minutes to complete each 10 question quiz. The purpose of the quizzes is to help to prepare the students for the major examinations. There are absolutely NO provisions for late, or make-up quizzes.

**TEAM PROJECT: Virtual “Collecting Jar” (Required: 100 total possible points)**  
**See Course Schedule for Due Dates**

The instructor will divide the class into four or five (4 or 5) member teams, with one member being elected (by the group) as the “Team Leader”. The Team Leader will be responsible for submitting the group’s answers via eCampus. All team members will share in the points earned based on the number of correct answers, and their level of participation in the processes involved in completing the assignment.

From digital files, each team will be given 80 images of various arthropods which they will classify into the appropriate taxa, as indicated with the image. The answers to the questions concerning classification will then be submitted BY THE TEAM LEADER to the instructor via the assignment tab on eCampus. All of the answers must be spelled correctly to receive full credit (check the syllabus page 13). **Only the terms used on page 13 are acceptable.** After the time limit has expired, the site is closed and there is no option for submitting late work.

The students will be required to use the discussion forums located in eCampus for their group. Each student must participate and there must be clear evidence of communication, otherwise the non-participating student will receive a “0” (zero) for the assignment. A survey document will be used by the student to evaluate both their and other team member’s participation on this assignment. The results of this evaluation will be used to assign points for this project. Students will **lose** points for failing to complete the peer survey. 80 points will be awarded based on correct answers submitted by the group leader. An additional 20 points may be awarded based on participation. If a group member does not participate, no points (**at all**) will be awarded. Any disputes concerning the grade received, must be resolved with the instructor within 7 days after the grade is posted.

**Taxonomic Puzzle (Required: 30 Points)**

This assignment is designed to supplement the lectures on the classification of insects and other arthropods, and to encourage the student to stay current in learning the “orders of the day”, which will be covered on the first two major examinations. This information will also be critical to the students when completing other assignments including: Virtual Collection Jar (team project), Movie Review, and Poem or Song. This assignment is based on the format of a cross word puzzle wherein clues (across and down) will be given which pertain to the taxa that are assigned to the specific arthropods for identification and communications among scientists and students. The assignment is to match the possible taxa or other designation from the provided list on **page 13, and only those terms are acceptable answers.** The responsibilities are for the student to consider the clues, and fill in the cross word puzzle making sure the spelling is correct and the number of letters in the answer fit the puzzle matrix. The student will receive an individual puzzle on eCampus, and will submit the answers through eCampus

using the format at that site. Each clue has one of 42 possible answers, so the clues must be read and considered carefully before submitting the work. Each correct answer is worth 0.6 points. After the time limit has expired, the site is closed and there is no option for submitting late work. A word bank will be provided.

### **Writing Assignments (Required: 60 points)**

**This assignment is to understand the “scientific method”, as it applies to science**

1. Read an abstract and identify the hypothesis (10 points)
2. Read an abstract and answer 5 questions (20 points)
3. Read an assigned paper and write an abstract of 200-300 words (30 points)

**Critical reading assignments** will expose the student to primary literature on insects from current research articles published in major journals. Students will be required to read the article associated with each assignment and answer a series of short answer questions about what has been read. All writing assignments will be available from the start of the semester. Writing Project will challenge students to use what has been learned about scientific writing and Entomology to write a summary/abstract of a current research article. The student will have most of the semester to complete this project. Submit via the submission box. **NO ATTACHMENTS WILL BE ACCEPTED. After the time limit has expired, the site is closed and there is no option for submitting late work.**

### **Movie Review (Required: 30 Points)**

Each student will choose one of three movies (selected by the instructor and available for viewing via eCampus) to view and critique. These movies include arthropods as the theme. The assignment must be submitted via eCampus and on time to receive credit. After the time limit has expired, the site is closed and there is no option for submitting late work. Please refer to the class schedule and/or calendar for the due date.

Upon completion of viewing the movie, visit the ASSIGNMENT tab in eCampus to complete the assignment. Submit via the submission box. **NO ATTACHMENTS WILL BE ACCEPTED. After the time limit has expired, the site is closed and there is no option for submitting late work.**

The students should be prepared to answer the following questions about the movie chosen to watch and review:

1. Movie Title
2. Date of Release
3. Arthropods depicted (Order(s) and Class(es)) – be sure to list ALL arthropods used in the film
4. Was the morphology and biology of the insect correctly portrayed. Give examples.
5. Briefly describe the plot of the movie
6. Briefly give your opinion of the movie (What did you like? What did you not like?)

The review must be the student’s original work. This is NOT a group project and must be the individual work of the student.

**Student Poem/Song (15 required points; Extra credit possible: 5/10 points)**

**See Schedule of Lectures for Due Dates**

Each student is required to submit a song or a poem that will be submitted in text format via eCampus. Students may work individually or in groups of 3 or more, with each student contributing a minimum of six lines to the poem. The song or poem must be about an arthropod and the Order/Class of the subject must be indicated in the text. This work may be of any reasonable length (minimum of 6 lines). Be creative, but sensitive, to your fellow students! Refrain from using offensive language and themes. Check the schedule for the due date. Be sure that a confirmation message is received from the instructor that the work has been received on time. After the time limit has expired, the assignment will close and late work will not be accepted. Work turned in after the due date receives "0" (zero) credit.

**Students have an opportunity to earn an additional 5 (individual) or 10 (group/person) points in addition to submitting the poem on eCampus.** The student or group may create a video of the poem/song performance and submit via eCampus. The student will not get credit if the poem or song is not submitted on time, prior to video submission. Submit text of poem via submission box. The performance must be recorded as a video and uploaded through eCampus, or via YouTube. Make sure the page is NOT set to "private". Written submissions of poems/songs will not be accepted. Please do not submit the file in .wmp (Windows Movie Maker) format.

**Grading**

Late work will not be accepted. See the "Notice about All Assignments" section for guidelines. Final grades will be calculated based on the total points received during the semester. The instructor reserves the right to scale the grades based on class performance, and extra credit assignments. A summary of the points available is as follows:

**Approximate Grading Scales (%)**

<b>Syllabus Confirmation</b>	<b>5</b>	
<b>Poem/Song</b>	<b>15</b>	
<b>Examinations</b>	<b>300</b>	
<b>Quizzes</b>	<b>60</b>	90-100%=A
<b>Team Project</b>	<b>100</b>	80-89% = B
<b>Writing</b>	<b>60</b>	70-79% = C
<b>Taxonomic Puzzle</b>	<b>30</b>	60-69% = D
<b>Movie Review</b>	<b>30</b>	0-59% = F (non-passing)
<b>Total points</b>	<b>600</b>	

### Suggested Text

Texts that are useful to students, **but not required**, are: *A Field Guide To The Insects* by Borror and White and *A Field Guide to Common Texas Insects* by B.M. Drees and J.A. Jackman. The current version of the notepacket, which is prepared specifically for this semester's class, can be purchased at the MSC bookstore (Barnes & Noble).

### Course Web Page

The website is located at: <http://eCampus.tamu.edu>. This page will give updates on what is happening in the class, recommendations for assignments, current grade reports, and links to interesting entomology pages, as well as copies of the syllabus, the lecture schedule, and reading assignments. **The student is required, and expected, to check the eCampus site frequently for updates and assignments, review sheets, and further suggestions.**

### **NOTE TO STUDENTS\*:**

The materials used in this course are copyrighted. By "materials", it is meant everything generated for this class, which include, but are not limited to, the syllabus, quizzes, examinations, n-line materials, review sheets, problem sets, and video clips. Because these materials are copyrighted, no student has the right to copy the handouts, unless the instructor expressly grants permission. The instructor has authorized NO CLASS NOTES other than those made available through this class. As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, THE STUDENT IS COMMITTING PLAGIARISM IF THE WORK OF ANOTHER PERSON IS COPIED AND TURNED IN AS HIS OWN, EVEN IF PERMISSION FROM THAT PERSON HAS BEEN GIVEN. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. Plagiarism will not be tolerated in this course. Offenders of this policy will be punished according to University policies, which may include being expelled from the Institution. In addition, there will be no cheating of any type tolerated in this course. If the student has any questions regarding plagiarism, he or she should consult the latest issue of the *Texas A&M University Student Rules*, under the section "Scholastic Dishonesty"

\* Statement from the Texas A&M University Faculty Senate-January 9, 1997

### **Academic Integrity Statement**

An Aggie does not lie, cheat or steal, or tolerate those who do. **This policy will be enforced on all assignments and examinations.**

### **American Disability Act**

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 the student believes he or she has a disability requiring an accommodation, it is their responsibility to contact the Department of Disabilities Services, Cain Hall or call 979-845-1637 (E-mail: [disability@tamu.edu](mailto:disability@tamu.edu)) If the student needs these services, let the instructor know **two weeks before the first examination.**

## Possible answers for the Virtual Jar Team Project and Taxonomic Puzzle

### Subphylum:

Atelocerata (Insects, Millipedes, Centipedes) (Alcohol, Pinned, and Pointed)  
Chelicerata (Spiders, Scorpions, Ticks) (Alcohol)  
Crustacea (Pill Bugs/Sow Bugs/Rolly Pollies, Shrimp, Lobsters, Crabs) (Alcohol)

### Class:

Arachnida (Spiders, Scorpions, Ticks) (Alcohol)  
Chilopoda (Centipedes) (Alcohol)  
Diplopoda (Millipedes) (Alcohol)  
Hexapoda (Insects) (Alcohol Pinned and Pointed)  
Malacostraca (Pill /Sow Bugs, Shrimp, Lobsters, Crabs) (Alcohol)

### Order:

Blattodea (Cockroaches) (Immatures in Alcohol, Adults Pinned or Pointed)  
Coleoptera (Beetles) (Immatures in Alcohol, Adults Pinned or Pointed)  
Collembola (Springtails) (Alcohol)  
Decapoda (Shrimp, Lobsters, Crabs) (Alcohol)  
Dermaptera (Earwigs) (Alcohol)  
Diptera (Flies, Gnats, Mosquitoes) (Immatures in Alcohol, Adults Pinned or Pointed)  
Embiidina (Web-spinners) (Alcohol)  
Ephemeroptera (Mayflies) (Alcohol)  
Hemiptera (True Bugs) (Immatures in Alcohol, Adults Pinned or Pointed)  
Hymenoptera (Ants, Bees, Wasps, Sawflies) (Immatures in Alcohol, Adults Pinned or Pointed)  
Isopoda (Pill/Sow Bugs/Rolly Pollies) (Alcohol)  
Isoptera (Termites) (Alcohol)  
Lepidoptera (Butterflies, Moths) (Immatures in Alcohol, Adults Pinned or Pointed)  
Mantodea (Praying Mantis) (Immatures in Alcohol, Adults Pinned or Pointed)  
Mecoptera (Scorpionflies) (Adults pinned, immatures in Alcohol)  
Neuroptera (Dobsonflies, Lacewings, Antlions, Owlflies) (Immatures in Alcohol, Adults Pinned)  
Odonata (Dragonflies, Damselflies) (Immatures in Alcohol, Adults Pinned or Pointed)  
Orthoptera (Grasshoppers, Crickets, Katydid) (Immatures in Alcohol, Adults Pinned or Pointed)  
Phasmatodea (Walkingsticks) (Immatures in Alcohol, Adults Pinned or Pointed)  
Phthiraptera (Lice) (Alcohol)  
Plecoptera (Stoneflies) (Alcohol)  
Psocoptera (Book Lice, Bark Lice) (Alcohol)  
Siphonaptera (Fleas) (Alcohol)  
Thysanoptera (Thrips) (Alcohol)  
Thysanura (Silverfish) (Alcohol)  
Trichoptera (Caddisflies/Rockrollers) (Alcohol)

### Suborder:

Anoplura (Sucking Lice) (Alcohol)  
Mallophaga (Chewing Lice) (Alcohol)  
Auchenorrhyncha (Cicadas, Leafhoppers) (Immatures in Alcohol, Adults Pinned or Pointed)  
Heteroptera (True Bugs) (Immatures in Alcohol, Adults Pinned or Pointed)  
Sternorrhyncha (Aphids, Scales, White Flies) (Use alcohol, or pin the leaf with Scale attached)