

INSECT BIOLOGY
BIOL 5331 Fall 2026
MWF 12:20-1:15 pm, BEB COB 227
Dr. Jon Seal
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OFFICE HOURS: BEP 264. MWF 1;30-2:30 pm or by appointment

Week of	Topic	Reading
Sept 16	Unit I: Organismal Biology of Insects	
	Introduction (what is an insect?)	Chap. 1
	External Anatomy	
	Internal Anatomy and Function	Chap. 2
	Sensory Systems	Chap. 3
	Reproduction and Development	Chap. 4, 6.1-6.3
	Exam 1, Literature Assignment #1 Quiz	TBA
Oct 26	Unit II: Life history and evolution of Insects	
	Life Histories	Chap. 5-6
	Overview, Insect Evolution, Systematics	Chap. 7-8
	More evolution	
	Insect Societies	Chapter 12
Nov 2- 20	Exam II, Literature Assignment #2 Quiz	TBA
	Unit III: Ecology of Insects, Applied Entomology	
	Insect Ecology (plant-insect-fungal interactions, interactions with abiotic world, predation, parasitism, and so on)	Chap 9-11, 13-14,
	Biomedical and Conservation Entomology	15-17
	Graduate Student Lectures (TBA)	
Nov 30	Exam III, Literature Assignment 3 Quiz	

FINAL EXAM: TBD

Please Note: the schedule described above is tentative.

Important Dates:

January 19: Martin Luther King, Jr Day (No Class)
September 8: Census Date
October 30: Withdrawal Date
November 23-27: Thanksgiving (No Class)
December 4: Last Day of Classes
December 7-11, Final Exam Week

COURSE DESCRIPTION: The objectives of this course are to enable students to learn about all aspects of insect biology (organismal biology, evolution and ecology).

TEXTBOOK: Gullan and Cranston, *The Insects: An Outline of Entomology*, Wiley-Blackwell , Fifth edition, 2014. Additional readings on topics not covered in the textbook will be posted on Canvas.

EVALUATION: Grades will be assigned based on the performance on three exams and three literature assignments. The exams will occur during regularly scheduled class time. The final exam will be optional for undergraduates and replace the lowest regular 100 point exam (the final exam will also be worth 100 points). The final exam will take place during the scheduled final exam period at the end of the semester. The final exam will be comprehensive and cumulative.

1. **Exams.** Each student will have an entire class period take the exam. Pay attention to all announcements in class on on Canvas. See policy on missed exams and assignments below. Although exams will stress the material preceding each exam, all exams should be considered comprehensive (as is all biology). Exams will cover the materials presented in lectures and assigned readings. If you arrive late to class and everyone has completed the quiz or exam, you will not get a makeup quiz or exam. If you arrive late and someone has taken the quiz (or exam) and left the room, you will not get a quiz or exam. Arrive to class on time. **Realize that questions of written exams are not ‘open ended questions’ or opinion-based. The questions I ask you will have definite, correct answers and will not involve your opinions unless I explicitly ask you for your opinions.** Also realize that if you write a very long answer but do not answer the question and/or provide factually incorrect statements, you may earn 0 points for that question. While you may earn partial credit, depending on the completeness of your answers, do not expect to receive points for effort. If you do not answer the question, you will receive zero points. Students must answer the questions clearly using complete sentences, not bullets or phrases. This is not meant to torture students, but the ability to communicate effectively and remember content across courses are very important skills. Thus the clarity of written answer will be a factor in grading. **I do not give extra credit.** Exams will be closed book and the use of electronic devices is not allowed.
2. **Literature Quizzes** The literature assignment will focus on an assigned reading from the primary literature. The assignments will involve questions about the reading. Reading assignments will be released on Canvas at least one week prior to the quiz that will take place during class. Read the paper before that class. Take notes (and bring the notes to the quiz if you wish).
3. **Lecture (Graduate students only):** Graduate students will be required to 1) give a lecture on an entomological topic given toward the end of the semester and 2) take the required final exam (the final exam is optional for undergraduates). This will be a lecture and, like any other lecture in this course, this lecture will provide

testable material to the graduate and undergraduate students in the class. The topic should be a general, textbook topic. Examples could include insect plant interactions, insect fungal interactions, insect-wood interactions, insect vectored human diseases, etc. A grading rubric will be provided to help students write up a lecture. The topic of the lecture must be arranged with and approved by the instructor. The lecture will be worth 100 points. Graduate students should also expect to have more comprehensive exams where they may have to answer more questions and provide more information than undergraduates.

GRADING: All students: Each of the three exams will be worth 100 points each. The three literature quizzes will be worth collectively 100 points (the first and second assignments will be worth 33 points and the third assignment will be with 34 points). **Graduate students:** the lecture and final exam will be worth 100 points each.

Thus, the grade breakdown for graduate students will look like this:

	Graduate Students
Exams (3 exams, 100 points each)	300
Literature Assignments	100
Lecture`	100
Required Final Exam	100
Total	600

Final grades in the course will be determined by a standard grading system
90 – 100% = A 80 – 89% = B 70 – 79% = C 60 – 69% = D < 59% = F

To calculate a final grade, divide your total points by the maximum possible number of points. For example, the threshold for an graduate to receive an A would be 540 points (90% of 600).

Rounding: Grades will be rounded to the nearest whole number, e.g., an 89.1 is a B (rounded to an 89) whereas an 89.7 would be rounded up to a 90. This also means that grades in the middle of a bin, e.g., a 77 or an 87 will not be rounded to an 80 or 90, respectively.

In grading, I strive for fairness and consistency. If you feel like a grading error was made on an exam, you may submit a typed appeal within a week (7 days) of when the exam was returned to you. Your written appeal should be based on course materials and should stress the scientific validity of your original response.

Although exams will stress the material preceding each exam, all exams should be considered comprehensive (as is all biology). Exams will cover the materials presented in lectures and assigned readings. Since this is an upper level course and students should have a grasp of basic biology, genetics and ecology, most of the exams will have a short answer format and contain some longer essay type questions. You must answer the questions clearly using complete sentences. This is not meant to torture you, but the

ability to communicate effectively and remember content across courses are very important skills. Thus the clarity of your written answer will be a factor in grading.

Attendance: Attendance is required. Lectures will not be online. If you miss class, you can find out what was covered from another student. Please be advised that this is an upper level biology course. Not all of the material will be covered in the textbook and I may not cover all material that is in the textbook. Hence, it is in your best interest to attend class every day.

PRE_REQUISITES: General Biology (BIOL 1306, 1307), Genetics (BIOL 3332), Ecology (BIOL 3336) and Cell Biology (BIOL 3334)

More on grading. In the event you wish to dispute an exam question, an essay outlining your argument must be submitted within one week of the exam being handed back to you. Your request must be justified with content from the lecture, textbook or other scientific peer-reviewed source, i.e., not random websites. Calculation mistakes must also be made in writing. No make-up exams will be given, unless arranged ahead of time with a valid excuse (e.g., athletic tournament, hospitalization, etc.).

No Grade Grubbing (please!). Grade grubbing is asking for points you did not earn. It's unethical to ask and would be unethical for me to award points. Also, within the category of grade grubbing is asking for exams or quizzes to be regraded outside the window where you are allowed to do so. Grade grubbing is **not** asking about your grades or trying to understand where you went wrong.

Academic Misconduct: Submitting plagiarized work to meet academic requirements including the representation of another's work or ideas as one's own; the unacknowledged word for word use of another person's ideas; and/or the falsification, fabrication, or dishonesty in reporting research results shall be grounds for charges of academic misconduct. **Any cheating or other type of academic misconduct will be reported to university administration and at minimum will result in automatic failure of the course.** Cell phone use during exams or quizzes is strictly forbidden.

Supplements: Illustrations, announcements and PowerPoint presentations will be available on Canvas. These materials are strictly for your own use, and are not to be disseminated to anyone else, under any circumstances. Lectures may be supplemented by films shown during class. Films and videos are not 'busy-work' and will contain testable information and will provide new information or reaffirm the information presented in lecture. **Lectures and supplements represent testable material.** The textbook also has an excellent website with quizzes and other study aids. <https://learninglink.oup.com/access/bowman6e>. While the online supplements will not directly count toward your grade, students who avail themselves of this feature often learn more and have higher grades.

Study Help. I will distribute study guides that contain a list of concepts or pose questions that should help you master the topics in this course. These lists are not exhaustive but should point you toward the correct direction.

Artificial Intelligence Statement

For this course, **AI is not permitted in this course at all.** I expect all work students submit for this course to be their own. I have carefully designed all assignments and class activities to support your learning. Doing your own work, without human or artificial intelligence assistance, is best for your efforts in mastering course learning objectives. For this course, I expressly forbid using ChatGPT or any other artificial intelligence (AI) tools for any stages of the work process, including brainstorming. Deviations from these guidelines will be considered a violation of UT Tyler's Honor Code and academic honesty values.

Recording of Class Sessions

Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in this course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.