

Biology of Insects BIOL 4070 Fall 2020

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Office Hours: Monday & Wednesday 0930 – 11:00 or by appointment. See the note below.

Required Text: *The Insects An Outline of Entomology* 5th Edition by P. J. Gullan and P.S. Cranston.

Attendance: Attendance is expected in both the lecture and the laboratory.

Course Structure: Insect Biology will be taught using a hybrid approach. **The lecture** will be taught synchronously using ZOOM (T/Th 11:00-1220). The laboratory will be taught on Thursdays from 1:00-4:00. Attendance is expected in the lecture and laboratory.

Student success in a remote teaching environment requires specific technological resources.

Course Minimum Technology Requirements

- Computer with a camera, speakers and microphone
- Reliable internet access sufficient to use ZOOM and Canvas Technical Requirements (<https://clear.unt.edu/supported-technologies/canvas/requirements>)
- At this time, lecture tests will be given during the laboratory. However, if the laboratory is switched to remote teaching, your computer must be capable of operating in the lockdown mode of Respondus.

The laboratory will be taught Face to Face. I believe that students taking an *ology* course need to have hands-on experiences. This will be provided through laboratory and associated field activities. The laboratory meets on Thursday from 1:00 to 4:00. The UNT fall schedule requires Face to Face courses, to transition to fully remote instruction beginning 28 November. While I hope that the laboratory will continue Face to Face throughout the semester, if COVID-19 infection rates increase, both instructors and students need to be aware that the lab will also be taught remotely. Please refer to the Laboratory Syllabus for complete details.

INSECT BIOLOGY (Entomology) is a basic course in the study of insects. Insects are the most diverse group of animals found on Earth, outnumbering all other species of animals and plants combined. Course emphasis is placed on understanding factors that contribute to the success of insects and the diversity of forms and behaviors. The course is intended to provide a general background in entomology, to satisfy general knowledge, and /or provide a foundation for research/teaching careers in ecology, conservation, or environmental science.

OBJECTIVES:

The overall course objective is to examine the role that insects play in the ecosystems they inhabit and to understand how ecosystems influence the insects that live in them.

Upon completion of this course, a student should be able to:

1. Demonstrate knowledge of the taxonomy of adult insects and identify:
 - a. basic morphological structures common to all insects.
 - b. all insects to order on sight.
 - c. common insects to the family on sight.
 - d. most insects to family and genus with taxonomic keys and microscope.
2. Describe selected aspects of the biology of insects:
 - a. behavior
 - b. habitat preferences
 - c. feeding habits
 - d. life history
 - e. metamorphosis
 - f. physiology
 - g. reproduction
 - h. adaptations to the environment
 - i. functions in ecosystems
3. Demonstrate current methods used in entomology:
 - a. collecting
 - b. preserving
 - c. preparing specimens for study
 - d. curating

TENTATIVE SCHEDULE

Date	Topic	Reference
Structure and Function		
25 Aug. 2020	Introduction: Class policies, Definition of insects, Biodiversity of Insects	Chap 1,& notes
27 Aug. 2020	Arthropods other than Insects, Evolution, Classification	Chap 1 Chap 7
01 Sep. 2020	General morphology of Adult insects, Integument	Chap 2
03 Sep. 2020	Internal Anatomy – muscles locomotion-flight	Chap 2
MAJOR LIFE SYSTEMS		
08 Sep. 2020	Tracheal System – getting oxygen to the tissues –structural and behavior	Chap 3
10 Sep. 2020	Tracheal System cont'd	Chap 3
15 Sep. 2020	Circulatory System – Cardiac physiology	Chap. 3
17 Sep. 2020	Insect Feeding and the Digestive System	Chap. 3
22 Sep. 2020	Excretory System	
24 Sep. 2020	EXAMINATION #1 – 1:00 in the Laboratory	Chap. 3
29 Sep. 2020	The Nervous System ... Sensing the Environment	Chap. 3
01 Oct. 2020	Sensory Mechanisms and receptors ... mechanoreceptors, chemoreceptors.	Chap. 4 (Section 4.1 - 4.2)
03 Oct. 2020	Sensory Mechanisms and receptors ... mechanoreceptors, chemoreceptors. Continued	Chap. 4 (Section 4.1 - 4.2)
06 Oct 2020	Exocrine and Endocrine Glands and their Functions	Chap. 3 (Section 3.3)
08 Oct. 2020	Reproduction: Male systems and Female systems; Mating Strategies	Chap. 3 (Sections 3.81 - .82)
13 Oct. 2020	Life Histories	Chap. 6
15 Oct 2020	Life Histories cont'd - First Lab Practical	Chap. 6
20 Oct. 2020	Insects and Plants	Chap 10
22 Oct. 2020	EXAMINATION - #2 – 1:00 in the Laboratory; includes material covered through 15 Nov.	

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27 Oct 2020	Insects and Plants ... Cont'd	Chap 10
29 Oct 2020	Insect Societies	Chap. 11
03 Nov. 2020	Insect Societies ... Cont'd	Chap. 11
05 Nov. 2020	Introduction to Medical Entomology	
10 Nov. 2020	Medical Entomology Cont'd	
12 Nov. 2020	EXAMINATION #3 – 1:00 in the Laboratory; includes material covered through 10 Nov	
17 Nov. 2020	Forensic Entomology	Chap 9 section 9.4
19 Nov. 2020	Forensic Entomology. Second Lab Practical	
24 Nov 2019	Buffer day –	
26 Nov. 2020	No Class Thanksgiving Vacation ... Go south & collect insects.	
01 Dec. 2020	A synthesis of the semester's lecture and laboratory concepts	
03 Dec. 2020	Opportunities for a career in Entomology or related field.	
08 Dec. 2020	FINAL EXAMINATION ... 10:30 - 12:30	

Please note that this syllabus is tentative. I will make every attempt to cover the materials in the syllabus as outlined but reserve the right to make changes.

Examinations:

There are three lecture examinations and a final examination. The examinations will occur on Thursday during the first hour of the laboratory. On examination days, the introductory laboratory material will be presented via ZOOM during the scheduled lecture period (11:00-12:20). The final exam will occur on 08 December 2020 and will be given remotely using Respondus (in lockdown mode).

Grading: The grade you earn in Insect Biology is based on your Lecture grade and Laboratory grade. They are equally weighted and account for 90% of your final grade. The other 10% of your grade is based on participation. Participation points are based on class attendance and participation in the class activities (**both lecture and laboratory**) and meeting deadlines. Frequent quizzes are given in the lecture. The quizzes provide insight into questions that might occur on the opportunity and provide clues on what to emphasize when studying. The quizzes also provide the instructor with how well students are grasping concepts. The quizzes are used as an attendance check and are not graded.

This class includes undergraduates and graduate students. Lecture requirements are the same for undergraduates, and graduate students course requirements. However, when calculating lecture test grades, graduate students are considered separately from undergraduate students. Graduate student exams will often include additional short answer questions. If a *curve* is applied to an opportunity, graduate scores will not be considered. The requirements of the insect biology laboratory also differ for graduate students. These differences are outlined in the laboratory syllabus. **Please Note, if you receive an “F” grade in either the laboratory or the lecture, the highest grade you can receive in the class is a “D”.**

Final Insect Biology grade = (lecture percentage + laboratory percentage) / 2

A = 89.5 – 100
B = 79.5 – 89.4
C = 69.5 – 79.4
D = 59.5 – 69.4
F = 59.4 and below

Although I do not anticipate any reason to modify this grading plan, I reserve the right to do so if circumstances warrant. I will inform the class if modifications to the grading scale are necessary.

Office Hours: If you are having problems with the class material, you are encouraged to contact me as soon as possible, there is not much I can do for you during the last few weeks of the class. Please feel free to drop me an email (kennedy@unt.edu), and we can schedule a ZOOM meeting.

Acceptable Student Behavior: Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not

be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's Code of Student Conduct (<https://deanofstudents.unt.edu/conduct>) to learn more. Video or voice recording is not permitted.

Disability Accommodation: *The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time. However, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at [940.565.4323](tel:940.565.4323).*

Academic Integrity Standards and Consequences: Academic dishonesty in this class is unacceptable and will not be tolerated in any form. Cheating affects the entire class. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. All persons involved in academic dishonesty in either the lecture or laboratory will be disciplined in accordance with University regulations and procedures.

Penalties for Academic Misconduct

- **First offense:** A “0” will be recorded as the score for that activity **AND** the final course grade is reduced by one complete grade.
- **Second offense:** An assignment of F (Fail) for the final course grade.
- For grievous infractions such as, but not limited to, a systematic or collaborative event: An assignment of F (Fail) for the final course grade may be issued in the case of a first offense. An example of a grievous 1st offense that will result in an “F” in the course would be turning in collections that you have stolen, borrowed, or otherwise not personally collected and try to pass them off as your work.

Drop Information: <http://registrar.unt.edu/registration/dropping-class>. If you decide to drop the class, ALL EQUIPMENT that has been assigned to you, (collecting and insect preparation materials) MUST be returned to the lab instructor. There are no exceptions to this policy. Failure to turn in equipment will BE CONSIDERED THEFT OF UNIVERSITY PROPERTY. It will also result in a WF assigned as a grade.

ACADEMIC SUPPORT & STUDENT SERVICES

Mental Health

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center) (<https://studentaffairs.unt.edu/student-health-and-wellness-center>)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- [UNT Care Team](https://studentaffairs.unt.edu/care) (<https://studentaffairs.unt.edu/care>)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry) (<https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling) (<https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling>)

Chosen Names

A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- [UNT Records](#)
- [UNT ID Card](#)
- [UNT Email Address](#)
- [Legal Name](#)

**UNT eUIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.*

Pronouns

Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don't assume someone's name, we should also ask and not assume someone's pronouns.

You can [add your pronouns to your Canvas account](#) so that they follow your name when posting to discussion boards, submitting assignments, etc.

Additional Student Support Services

- [Registrar](https://registrar.unt.edu/registration) (<https://registrar.unt.edu/registration>)
- [Financial Aid](https://financialaid.unt.edu/) (<https://financialaid.unt.edu/>)
- [Student Legal Services](https://studentaffairs.unt.edu/student-legal-services) (<https://studentaffairs.unt.edu/student-legal-services>)
- [Career Center](https://studentaffairs.unt.edu/career-center) (<https://studentaffairs.unt.edu/career-center>)
- [Multicultural Center](https://edo.unt.edu/multicultural-center) (<https://edo.unt.edu/multicultural-center>)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (<https://edo.unt.edu/pridealliance>)
- [UNT Food Pantry](https://deanofstudents.unt.edu/resources/food-pantry) (<https://deanofstudents.unt.edu/resources/food-pantry>)

Academic Support Services

- [Academic Resource Center](https://clear.unt.edu/canvas/student-resources) (<https://clear.unt.edu/canvas/student-resources>)
- [Academic Success Center](https://success.unt.edu/asc) (<https://success.unt.edu/asc>)
- [UNT Libraries](https://library.unt.edu/) (<https://library.unt.edu/>)
- [Writing Lab](http://writingcenter.unt.edu/) (<http://writingcenter.unt.edu/>)