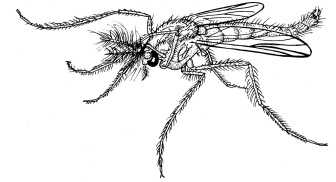


Aquatic Insects of North America
BIOL 4560/5570
Spring 2024



Instructor: Dr. James H. Kennedy
Regents Professor Biological Sciences
EESAT 310F
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Office Hours: M. & W. 1:30 - 2:30 or by appointment

Time and Room

Lecture: 11:00 - 12:20 Tuesday & Thursday (EESAT 391)
Lab: 2:00 - 4:50 Thursday (EESAT 358)

Laboratory Instructor: James Shugart

Required Text: *An Introduction to the Aquatic Insects of North America* (5th Edition)-
Editors Merritt, Cummins and Berg.

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

AQUATIC INSECTS is a basic course in the taxonomy and biology of the insects most commonly encountered in freshwater habitats. Emphasis is placed on the identification of aquatic insects and important aspects of their biology, such as life cycles, habitat preferences, feeding habits, adaptations to environments, and functions in ecosystems. The course is primarily intended for persons interested in careers in aquatic ecology, fisheries science, and environmental science.

OBJECTIVES:

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

1. Demonstrate knowledge of the taxonomy of aquatic insects and identify:
 - a. basic morphological structures common to all aquatic insects.
 - b. all aquatic insects to order on sight.
 - c. common aquatic insects to family on sight.
 - d. most immature aquatic insects to genus with taxonomic keys and microscope.
2. Describe selected aspects of the biology of aquatic insects:
 - a. behavior
 - b. habitat preferences
 - c. feeding habits
 - d. life history
 - e. metamorphosis
 - f. physiology
 - g. reproduction

- h. adaptations to freshwater environment
 - i. functions in aquatic ecosystems
3. Demonstrate current methods used in aquatic entomology:
 - a. collecting
 - b. preserving
 - c. preparing specimens for study
 - d. curating
 4. Have the competency to use aquatic insects as a tool in:
 - a. aquatic ecology studies
 - b. bioassessments
 - c. teaching

Course Outline and Tentative Schedule

DATE	TOPIC	READINGS ¹	LAB
16 January	Introduction, Introduction to General Entomology ²	Chapters 1, 4, 5 & 6	
18 January	Aquatic Ecology: Habitats, Habits & Trophic Levels ²	.	Introduction, Morphology, Grasshopper Dissection, Key to Order
23 January	River Webs + Written exercise	Chapter 5	
25 January	Ephemeroptera	Chapters 12 & 13	Collembola & Ephemeroptera
30 January	Ephemeroptera	Chapter 13	
01 February	Odonata	Chapter 14	Odonata
06 February	Odonata	Same	
08 February	Examination 1		Plecoptera
13 February	Plecoptera	Chapter 15	
15 February	Plecoptera Finish	Same	Hemiptera and Megaloptera/Neuroptera Review materials available for practical (Collection-spreadsheet check)
20 February	Hemiptera	Chapter 17	
22 February	Field Trip Depart 11:00 – no lecture		FIELD TRIP
27 February	Hemiptera	Same	
29 February	Megaloptera/Neuroptera	Chapter 18	MIDTERM LAB PRACTICAL
05 March	TBD		
07 March	Examination 2		FIELD TRIP
11 & 17 March Spring Break			

19 March	Minor Orders-Semiaquatic Orthoptera and Hymenoptera	Chapters 15, 22 Note Orders are not presented. phylogenetically	
21 March	Trichoptera	Chapter 18	Trichoptera
26 March	Trichoptera/ Lepidoptera	Chapter 19	
28 March	Coleoptera	Chapter 21	Coleoptera
02 April	Coleoptera	Chapter 21	
04 April	Examination 3		Diptera
09 April	Preparation for the overnight field trip. Sampling for Aquatic Insects Drift, Substrate Sampling.	Handouts	
11 April	Overnight Field Trip		Overnight Field Trip
16 April	Diptera	Chapters 23, 24, 25, 26, and 27	
18 April	Diptera (alternate date for overnight field trip)		Review Materials for Practical
23 April	Communities	Chapters 5 & 6	
25 April	Applications	Chapter 7	FINAL LAB PRACTICAL
30 April	Applications	Chapter 7	
02 May	Induction into the UNT Dead Nymph Society and Aquatic Insect Feast		COLLECTION, SPREADSHEET, EQUIPMENT DUE

¹ Merritt, Cummins and Berg, 2019. An Introduction to the Aquatic Insects of North America 5th Edition

² Chapters 1, 4, 5 & 6 provide the background information needed to understand aquatic insect ecology. These chapters complement the concepts introduced in Lecture and Laboratory.

Final Examinations: *Aquatic Insects of North America* final is scheduled for 07 May 2024 (10:30-12:30) in Room 391. The examination includes information from all areas that was covered during the semester.

Grading Lecture: There are three lecture opportunities (examinations) and a final opportunity.

Participation points: Quizzes are usually given in the first 10 minutes of the class. The quizzes are not scored (normally) and are not returned. You are encouraged to copy the quiz questions. However, to get credit for taking the quiz, you are expected to try to answer the questions - i.e. totally blank sheets are not acceptable.

Your quiz answers provide me with feedback on your progress. Quizzes also offer you insight into the type of questions and material covered in the opportunities. At the end of the semester, up to 3 percentage points will be added to your lecture semester average.

Participation Average	% Pts added to final average
90-100	3
80-89.99	2
75-79.99	1
<75	0

All opportunities (lecture and final) are equally weighted and will be averaged to determine the lecture portion of your grade. Participation points you earn, if any, will be added to the final average. Please note you are not penalized for non-attendance.

For example, for a student with 91% attendance and an 87% class average on opportunities the final grade would be $87\% + 3 = 90\%$.

Final lecture grades are based on the following scale: Grade Average Total Points needed A 90-100 360- 400 B 80-89.99 320 – 359.999 C 70-70.99 280 - 319.99 D 60-69.99 240 - 279.99 F 59.99-0 239.99 - 0 5 Grading.

The Final grade you earn in Aquatic Entomology is an **average of your lecture grade and laboratory grade** ((lecture percentage + laboratory percentage) / 2)

Grade	Average	Total Pts Needed
A	90-100	360- 400
B	80-89.99	320 – 359.99
C	70-70.99	280 - 319.99
D	60-69.99	240 - 279.99
F	59.99-0	239.99 - 0

Additional requirements to earn an A or B in the course. The A grade is reserved for outstanding performance, and the B grade for above-average performance has additional requirements. To earn an A in the course, you must earn at least a B in both the Laboratory and Lecture. To earn a B (above average) a grade of at least a C must be earned in the Lecture and Laboratory. Regardless of your scores in lecture or laboratory if your semester grade in either of these segments is an “F” the highest grade you can earn in the course is a “D”.

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.

Additional requirements for Graduate Students. The schedule for exams is the same for undergraduates and graduate students. However, when calculating lecture test grades and final grades graduate students are considered separate from undergraduates. Graduate student exams will often include additional short answer questions. Graduate scores on opportunities will not be considered if a curve is applied to an opportunity. The requirements of the aquatic insect laboratory also differ for graduate students. These differences are outlined in the laboratory syllabus.

Classroom Behavior: It is expected that student behavior will be courteous to the professor and other students. Students should arrive for class early and leave only at the end of class. I am aware this may not always be possible. If you arrive late please do not disrupt the class during your entrance. **If you missed the handouts for the class you will need to wait until the end of the class to receive them.**

Please turn off or silence cell phones during class. This course is taught in a small classroom; texting, and surfing the internet is a distraction to the instructor and students. Students violating such norms will be asked and expected to leave the classroom.

Lectures are considered academic property of the faculty. Students do not have permission to video or audio record lectures or laboratory presentations.

Consider taking notes by hand; there are numerous studies that show the benefits of taking notes by hand, recopying them afterward, and annotating them with information from course resources. Students violating such norms will be asked and expected to leave the classroom.

Office Hours: If you are having problems, you are encouraged to talk with me as soon as possible. Please feel free to drop by during posted office hours. It is always a good idea to contact me (even for visits during posted office hours) before you visit. My office is in EESAT 310F or you may e-mail me for an appointment at kennedy@unt.edu.

Important Dates (provided as a courtesy) please check and confirm dates on the UNT website <http://registrar.unt.edu/registration/spring-registration-guide> April 05, 2024 is the last day to drop a course with a W.

If you decide to drop the course, you must turn in the lab equipment assigned to you. Failure to return lab/collecting equipment will be considered theft of University Property and will be considered as such.

Disability Accommodation: The Department of Biological Sciences, in cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. The student requesting accommodations is reminded that he/she is responsible for contacting the instructors to discuss the implementation of the accommodations. Please present your written accommodation request before the 12th class day.

Dishonesty: Academic dishonesty in this class is unacceptable and will not be tolerated in any form. Cheating affects the entire class. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. See the end of this syllabus for examples of academic dishonesty and consequences. Before you can proceed in either the lecture or laboratory, you must have on file a signed ***BIOL 4560/5570 Aquatic Insects of North America Policy on Plagiarism and Cheating***. This policy is applicable in lecture and laboratory.

Drop Information: If you decide to drop the class, ALL EQUIPMENT 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 is CONSIDERED THEFT OF UNIVERSITY PROPERTY and will be reported to the UNT police department.

SEXUAL DISCRIMINATION, HARASSMENT, & ASSAULT

UNT is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these acts of aggression, please know that you are not alone. The federal Title IX law makes it clear that violence and harassment based on sex and gender are Civil Rights offenses. UNT has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. UNT's Dean of Students' website offers a range of on-campus and off-campus resources to help support survivors, depending on their needs. A summary of Student Resources for Sexual Assault, Sexual Misconduct, Relationship Violence, and Stalking can be found at <https://studentaffairs.unt.edu/dean-of-students>

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.*

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>)
- Counseling and Testing Services (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- UNT Care Team (<https://studentaffairs.unt.edu/care>)
- UNT Psychiatric Services (<https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>)
- 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.

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

Academic Support Services

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

BIOL Aquatic Insects of North America
BIOL 4560/5570
POLICY ON PLAGIARISM AND CHEATING ¹

University Policy: Your Instructors (lecture and laboratory) support and will enforce the University of North Texas policies concerning academic misconduct. Academic dishonesty in this class is unacceptable and will not be tolerated in any form. Please consult the website <https://vpaa.unt.edu/ss/integrity> for details.

Categories of Misconduct for which students are subject to discipline falls into the following categories: **Acts of Dishonesty, including but not limited to:**

1. Academic dishonesty -- cheating. The term "cheating" includes, but is not limited to:
 - a. copying or any unauthorized assistance in taking quizzes, tests, or examinations,
 - b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments,
2. Academic dishonesty -- plagiarism. The term "plagiarism" includes, but is not limited to:
 - a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment, and the knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in the selling of term papers or other academic materials (for example turning in insects bought on eBay).

Penalties for Academic Misconduct

- First offense: A "0" will be recorded as the score for that activity **AND** the final course grade reduced by one complete grade.
- Second offense: 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.

I acknowledge that:

- (1) I have been provided a copy of and read the BIOL 4070/5070 Policy on Plagiarism and Cheating located in the course syllabus.
- (2) I understand that instructors of this course have a zero tolerance policy for plagiarism and cheating and that policies as outlined in the syllabus will be enforced, without exception.

Print Name: _____

Signature: _____

Date: _____