

**Aquatic Insects of North America**  
**BIOL 4560/5570**  
**Spring 2022**



**Instructor:** Dr. James H. Kennedy  
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EESAT 310F  
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**Office Hours:** Monday 1:30 – 4:30 or by appointment

**Time and Room**

**Lecture:** 11:00 - 12:20 Tuesday & Thursday (EESAT 241)  
**Lab:** 2:00 - 4:50 Thursday (EESAT 358)

**Laboratory Instructor:** Maddy Hannappel

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

**Attendance:** Attendance is expected in both the lecture and the Laboratory.

**AQUATIC INSECTS** is a fundamental course in the taxonomy and biology of the insects most commonly encountered in freshwater habitats. The course includes two equal components: 1) **Lecture** where the emphasis is placed on important aspects of their biology such as life cycles, habitat preferences, feeding habits, adaptations to environments, and functions in ecosystems. 2) **Laboratory** activities focus on developing the skills needed to identify aquatic insects.

Aquatic insects are **used universally** by conservation and regulatory agencies to assess the ecological health of freshwater around the world. 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 (adults and immatures) and identify:
  - a. basic morphological structures common to all aquatic insects.
  - b. all aquatic insects to order on sight.
  - c. common aquatic insects to the family on sight.
  - d. most immature aquatic insects to the 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

Aquatic Insects is scheduled to be taught in person the entire semester. However, as UNT monitors health conditions associated with COVID on campus and in the community, it may become necessary for in-person classes to transition to fully remote instruction. **If it is necessary to switch to remote teaching**, students will need the following resources:

- 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>)
- Your computer must be capable of operating in the lockdown mode of Respondus.

### Course Outline and Tentative Schedule

DATE	TOPIC	READINGS <sup>1</sup>	LAB
18 January	Introduction to General Aquatic Entomology 2	Chapters 1, 4, 5 & 6	
20 January	Aquatic Ecology: Habitats, Habits & Trophic Levels 2		Introduction, Morphology, Grasshopper Dissection, Key to Order
25 January	River Webs + Written exercise	Chapter 5.	
27 January	Ephemeroptera	Chapter 12 & 13	Collembola & Ephemeroptera
01 February	Ephemeroptera finish	Chapter 13	
03 February	Odonata	Chapter 14	Odonata
08 February	Odonata finish	Same	
10 February	Plecoptera	Chapter 15	Plecoptera
15 February	Plecoptera Finish	Same	
17 February	<b>Examination 1 (Lectures 18 Jan - 06 February)</b>		Hemiptera and Megaloptera/Neuroptera. Review for lab practical
22 February	Hemiptera	Chapter 17	
24 February	<b>Field Trip Depart 11:00 – no lecture</b>		<b>FIELD TRIP</b>
01 March	Hemiptera Cont'd	Same	
03 March	Megaloptera/Neuroptera	Chapter 18	MIDTERM LAB PRACTICAL
08 March	Neuroptera	Same	
10 March	<b>Examination 2 (Lectures 18 February - 08 March)</b>		<b>FIELD TRIP</b>
<b>Spring Break (no classes) 15 &amp; 17 March Spring Break</b>			
22 March	Minor Orders- Semiaquatic Orthoptera and Hymenoptera	Chapter 15, 22 Note these Orders are not presented Phylogenetically	
24 March	Trichoptera	Chapter 18	Trichoptera (Collection-spreadsheet check)
29 March	Trichoptera/ Lepidoptera	Chapter 19	
31 March	Coleoptera	Chapter 21	Coleoptera
05 April	Preparation for the overnight field trip..	Chapter 3 & Handouts	
07 April	<b>Overnight Field Trip</b>	Chapter 3 & Handouts	
12 April	Coleoptera	Chapter 21	

14 April	<b>Examination 3 (Lectures 22 March - 05 April)</b>		Diptera
19 April	Diptera	Chapters 23, 24, 25, 26, and 27	
21 April	Diptera (alternate date for the overnight field trip)	Same	Review Materials for Practical
26 April	Communities	Chapters 5 & 6	
28 April	Applications	Chapter 7	<b>FINAL LAB PRACTICAL</b>
03 May	Applications	Chapter 7	
05 May	Induction into the UNT Dead Nymph Society and Aquatic Insect Feast		<b>COLLECTION, SPREADSHEET, EQUIPMENT DUE</b>

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

<sup>2</sup> 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:** The final examination for *Aquatic Insects of North America* is scheduled for 10 May 2022 (10:30-12:30). The examination includes information from all areas that were covered during the semester.

**Grading:** The grade you earn in Aquatic Entomology is an **average of your lecture grade and laboratory grade**. 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".

The Lecture grade is based on three lecture opportunities (examinations) and a final opportunity. All opportunities (lecture and final) are equally weighted and will be averaged to determine the lecture portion of your grade. Aquatic Insects of North America is a dual-listed course. Undergraduate and graduate students' scores are separated for the purpose of curving.

You can add up to 3 percentage points to each lecture test (opportunity) based on class participation. Participation points are based on your participation in-class activities. These activities are typically daily quizzes. The quizzes are not scored and are not returned. However, they provide insight into the type of questions and material that will be covered on the opportunities. Daily quizzes are usually given in the first 10 minutes of the class.

Final lecture grades are based on the following scale:

Grade	Average	Total Pts needed
A	90-100	360- 400
B	80-89.99	320 – 359.999
C	70-79.99	280 - 319.99
D	60-69.99	240 - 279.99
F	59.99-0	239.99 - 0

Grading criteria for the Laboratory are outlined in the Laboratory syllabus.

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

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

**Information regarding the Spring Academic Calendar and key Semester dates can e found at [Spring Academic Calendar & Registration Guide | Office of the Registrar \(unt.edu\)](#). If you have a problem with this link, cut and paste the following URL in your browser: <https://registrar.unt.edu/registration/spring-registration-guide>.**

**Drop Information:** 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 is CONSIDERED THEFT OF UNIVERSITY PROPERTY and will be reported to the UNT police department.

**If you decide to drop the course, you must turn in the lab equipment. Failure to return equipment will be considered a theft of University property and reported to the Department and UNT police.**

#### **ACCEPTABLE STUDENT BEHAVIOR**

Student behavior that interferes with an instructor's ability to conduct a class or other students' learning opportunity is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in inappropriate behavior will be directed to leave the classroom. The instructor may refer the student to the Center for Student Rights and Responsibilities 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 classrooms, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at <https://deanofstudents.unt.edu/conduct>.

It is expected that student behavior will be courteous of the course instructors and other students. Students should arrive for class early and leave only at the end.. On those days that you must arrive late, **please quietly enter the classroom and** do not disrupt the class during your entrance. **If you missed the handouts, please wait until the end of the class to receive them.**

**Cell phones must be turned off during class.** This course is taught in a small class room testing surfing the internet is a distraction to the instructor and students. Students violating such norms will be asked and expected to leave the classroom.

**Students do not have permission to video or audio record lectures or laboratory presentations.**

### **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: <https://studentaffairs.unt.edu/dean-of-students/conduct/sexual-misconductmisconduct/reporting-sexual-misconduct>. A summary of Student Resources for Sexual Assault, Sexual Misconduct, Relationship Violence, and Stalking can be found at [https://idea.unt.edu/sites/default/files/student\\_resources\\_for\\_sexual\\_misconduct.pdf](https://idea.unt.edu/sites/default/files/student_resources_for_sexual_misconduct.pdf)

**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:** 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 1<sup>st</sup> offense that will result in an "F" in the course would be turning in collections that you have stolen, purchased, borrowed, or otherwise not personally collected and trying to pass them off as your work.

## 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](#)

### 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/>)

### UNT COVID Guidelines:

An official notice from the UNT President regarding new mandatory measures to keep the campus safe can be found at <https://www.unt.edu/notices/new-mandatory-measures-keep-campus-safe-official-notice-president> a video is also available [Welcome to Fall 2021 – A Message from the President and UNT's Chief Medical Officer \(vimeo.com\)](#).

Everyone in the UNT community has a shared responsibility to sustain a healthy environment for ourselves, our coworkers, our students, and our visitors. Precautionary actions taken during the height of the COVID pandemic have been suspended. However, Faculty, students and staff are encouraged to wear a face covering indoors, get vaccinated, and continue to monitor their health to help keep our UNT community safe and healthy. If University or State policies change and Masks are mandated, this will be enforced in the classroom situation.

The most common symptoms of COVID-19 are fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, or diarrhea (<https://healthalerts.unt.edu/symptoms-monitoring>). **If you are experiencing any of these symptoms or are sick, please do not come to class** and contact me and your laboratory instructor. There is no penalty for missing class due to health-related circumstances. If you test positive or have a possible exposure, you should contact the COVID-19 Team ([COVID@unt.edu](mailto:COVID@unt.edu)) for guidance and to start the contact tracing process. To ask a question related to COVID-19, please email [COVID@unt.edu](mailto:COVID@unt.edu).

UNT COVID updates can be found at <https://healthalerts.unt.edu/?student=081321>



COVID Reporting.

**Dishonesty:** Academic dishonesty in this class is unacceptable and will not be tolerated in any form. Cheating can impact the entire class. All persons involved in academic dishonesty will be disciplined following University regulations and procedures. 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*

## **BIOL 4560/5570 AQUATIC INSECTS OF NORTH AMERICA POLICY ON PLAGIARISM AND CHEATING**

**University Policy:** Your Instructors (lecture and Laboratory) support and will enforce the University of North Texas policies concerning academic misconduct. Please consult the [University of North Texas Center for Student Rights and Responsibilities](http://www.unt.edu/csrr/) at <http://www.unt.edu/csrr/> including the [Code of Student Conduct](http://www.unt.edu/csrr/code_of_student_conduct.htm) at [http://www.unt.edu/csrr/code\\_of\\_student\\_conduct.htm](http://www.unt.edu/csrr/code_of_student_conduct.htm) which include the following text:

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

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,
- c. the acquisition, without permission, of tests or other academic material belonging to a faculty member, staff member or student of the University, or
- d. dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s).
- e. submitting for a grade that have not been collected or acquired as described in the lab syllabus.
- f. any other act designed to give a student an unfair advantage.

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
- b. 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 not collected by you without proper acknowledgment).

Plagiarism and/or cheating and disciplinary action for such are defined by the UNT Policy Manual Code of Student Conduct and Discipline as further defined in the next two paragraphs as quoted from this manual: "Plagiarism and cheating refer to the use of unauthorized books, notes, or otherwise securing help in a test; copying tests, assignments, reports, or term papers; representing the work of another as one's own; collaborating, without authority, with another student during an examination or in preparing academic

work; or otherwise practicing scholastic dishonesty.'" Academic dishonesty matters may first be considered by the faculty member who may assign penalties such as failing, reduction or changing of a grade in a test, course, assignment, or other academic work, denial of a degree and/or performing additional academic work not required of other students in the course. If the student does not accept the decision of the faculty member, he/she may have his/her case heard by the academic department chairperson or head for review of his/her case. If the student does not accept the decision of the academic department chairperson, he/she may then follow the normal appeal procedures listed in Disciplinary Procedures."