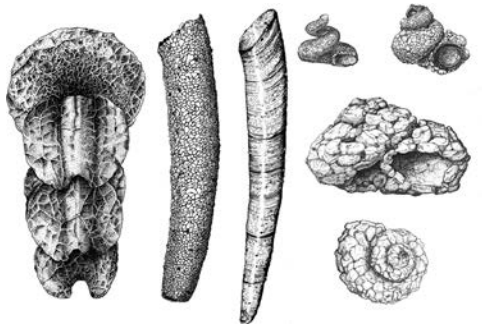
Aquatic Insects of North America Laboratory

BIOL 4560/5570 Thursday

1:00pm-4:50pm (EESAT 358)



Instructor: Megann Harlow

Office: EESAT 376

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Office hours: Wednesday 1:30-4:30 pm

Textbook: *An Introduction to the Aquatic Insects of North America* **(4th edition)** Merritt, Cummins and Berg.

Objectives: This class is intended to teach students methods of collecting, preserving, and curating aquatic insect larvae and adults. Upon completion of this course, students should be able to identify by sight-recognition, specimens to the **Family** level (**without taxonomic keys**). In addition, students will become proficient in identifying specimens to the **Genus** level **with the aid of taxonomic keys**. The ability to accurately identify organisms is fundamental to aquatic bioassessment, ecological and conservation studies. This course is also designed to provide the knowledge needed to prepare voucher collections of aquatic insects. The student should expect to be quizzed regularly over past material or by being asked to determine the Genus level identification of unknown specimens presented during each week's lab.

Laboratory Schedule

Note: the schedule is approximate; due to conditions such as weather and other events we are unable to predict it may be necessary to modify this schedule.

Date	Topic/Activity
Jan 18	Introduction, Morphology, Grasshopper Dissection, Key to Order
Jan 25	Collembola & Ephemeroptera
Feb 01	Odonata
Feb 08	Plecoptera **(Lecture Exam 1)**
Feb 15	Hemiptera/Megaloptera/Neuroptera - Review for practical (**Collection Check due**)
Feb 22	**FIELD TRIP**
March 01	**MIDTERM LAB PRACTICAL**
March 08	**FIELD TRIP (Lecture Exam 2)**

March 15	**SPRING BREAK** – *don't forget to collect – lab will be open*
March 22	Trichoptera & Lepidoptera
March 29	Coleoptera
April 05	Diptera
April 12	**OVERNIGHT TRIP DESTINATION TBD**
April 19	Review Materials for Practical
April 26	**FINAL LAB PRACTICAL**
May 03	**COLLECTION, SPREADSHEET, EQUIPMENT DUE**

COLLECTIONS ARE DUE MAY 3rd AT 4 PM- NO EXCEPTIONS! Collections turned in late will have collection letter grades lowered for each day after!

Cell Phones: Cell phones must be turned off during class.

Grading:

	Undergraduate	Graduate
Collection	245 pts	280 pts
Practical 1	100 pts	100 pts
Practical 2	100 pts	100 pts
Attend./Participation	100 pts	100 pts
Quizzes	50 pts	50 pts
Notebook	50 pts	50 pts
Total points	**545 points**	**580 points**

Details of requirements for each of these evaluations categories are given in the sections that follow. 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. The grade you earn in Aquatic Insects of N.A. is an average of your lecture grade and laboratory grade.

Insect Collections: A collection of aquatic insects is required for completion of the course. The collection process is designed to teach students collection techniques, introduce insect/habitat interactions, sharpen taxonomic skills, and preservation techniques. To earn the maximum points you must have the following:

Taxonomic Point Values	*Points*	*U*	*G*
Unique Orders	1 pt	10	10
Repeated Orders	0 pt	0	0
Family-Subfamily*	1 pt for each (max listed)	10	5
Repeated Family-Subfamily*	1 pt for each, max 5 pts from 5 locations	5	5
Genus	1 pt for each unique Genus	60	75
Repeated Genus	1 pt for each, from 5 different locations	10	5
General Collection Values			
Correct Labeling/Spreadsheet	1 pt each	75	85
Condition of Specimens		15	15
Phylogenetic organization	**If not in this order grade will be lowered a letter**	20	20
Unique Collection locals	UG (8 required) G (12 required)	40	60
Total		**245**	**280**

***** These specimens will only be identified to Family or Sub-family for the points.

Insect Trading & Other FAQ:

- You are allowed to trade insects to fellow classmates; HOWEVER **you must be the determiner for the identification**
- You are allowed to have friends & family members collect for you
- Give credit to the person who collected the specimen(s)
- Late collection checks or other work will not be graded

Insect Collection spreadsheet: A downloadable version of the collection spreadsheet is posted on Blackboard. An example version is also posted for reference. Please email your spreadsheet to me for both the Collection Check due February 15th and May 3rd when the final collection is due. Email to megannharlow@my.unt.edu. I will reply to your email verifying that I received your email. Specimen identifications will be entered and Order and Family entries will be listed in Phylogenetic Order (refer to Chapter 8 pg. 140) with Genus IDs in alphabetical order. **Therefore, your collections and spreadsheets will both be arranged phylogenetically and alphabetically.** Excel spreadsheets must be kept up to date and will be handed in when collections are due (emailing is preferred for your spreadsheets).

Unique Collection Local spreadsheet: You will be provided with an electronic copy of this spreadsheet that will be a separate tab in the Insect Collection spreadsheet. This spreadsheet will contain the locations from which you collected your aquatic insects. There will be a column to reference this spreadsheet in your insect collection spreadsheet. Undergraduates are required to have **8** different sampling locations, while Graduate students are required to have **12** different sampling locations. **Going to the same locations on different days DOES NOT count as different locations, and in order to diversify your collection it would be best to sample as many different water bodies as possible**. A list of local areas to collect from will be posted on Blackboard.

Weekly Laboratory: Laboratory time will be spent developing taxonomic skills through working with the verified specimens from the UNT teaching collection and then the application of these skills to the collections you are assembling. Development of taxonomic skills is one of the sentinel goals of the course. Digital photographs, photographs/drawings in books, although helpful in developing taxonomic skills, are not a substitute for spending time working with actual specimens. There will usually be time during the lab to work on your collections. It is expected that you will use the entire lab time to identify and prepare your specimens for the required student collection. I will be available to help you with identifications during the lab periods. You will be amazed at how fast your collection will develop if you use your lab time wisely.

Laboratory Quizzes: The student should expect to be quizzed regularly over past material or by being asked to determine the Genus level identification of unknown specimens presented during each week's lab. Quizzes will be given during the last hour of lab. **Missed quizzes will result in a 0.**

Lab Practicals: Laboratory practicals are designed to test your ability to identify aquatic insects. There are two lab practicals scheduled. They require extensive preparation on the part of the lab instructor and are very difficult to make up if you miss them. In the event of an unavoidable emergency absence (verifiable) during a lab practical, a makeup opportunity may be provided at the instructor's discretion. However, students should be aware that accommodations will only be made in the most EXTREME circumstances.

Field Notebook: Each student is required to keep a field notebook for personal reference. I suggest something small that can fit in your pocket or waders. From personal experience, you should only write in pencil and bring multiples – you will loose at least one in the field each time you go out. For the Field Notebook requirement for class I will provide a blank field sheet with the appropriate information to record from the field and your subsequent return to the lab.

Attendance: Participation points will be given during each lab/field trip when the student actively participates in lab activities and makes good use of lab time. Points will be deducted for missing lab/field trip and for not actively taking part in lab activities (i.e., sleeping, texting, working on something other than identifications and collections). ***Lab attendance and Field Trips are required***. Planned excused absences must be presented by the 2nd lab of the semester. The instructors reserve the right to assign an "F" or drop you from the course if you miss more than 3 weeks of lab.

Field Trips – There are two field trips scheduled during regular laboratory hours. These trips are designed to acquaint students with aquatic insect habitat interactions, basic field techniques that include data recording and collection of insects. If you use your time effectively you should be able to collect many of your required insects during these outings. On these days, we will depart no earlier than 11:00 am and return no later than 4:45 pm (I will announce on Tuesday the departure time for each field trip). Transportation will be provided to the collection sites. Driving personal vehicles is normally not permitted and permission to drive to the collection sites during the lab must be secured before the trip from the lab instructor and permission will be extremely limited. Fees for the class have already paid for transportation and in some instances, there may only be space to park for 1-2 vehicles. **For the field trips bring waders or hip boots, field clothing, rain gear, collecting jars/vials and alcohol, soft touch forceps, field notebooks, food and water, etc.**

TBA Overnight Trip - There are many ecological processes that occur or can only be observed at night. In order to experience these events and to learn how to study them there is one overnight trip planned for either: Honey Creek, Turner Falls Park, Davis, OK; Chickasaw National Wildlife Refuge, Sulphur, OK; or the Brazos River in Graford, TX on April 12th. This is a capstone event for the class and attendance is expected. Details will be discussed in class. At this even you will be camping – sharing of multiple person tents will be

needed. Each student is required to have their own sleeping bag and pad, if do not own such equipment you can **rent equipment at the Outdoor Pursuits** http://recsports.unt.edu/outdoor/equipment for very nominal fees (I estimated less than $15 for a 0 degree sleeping bag, stuff sack, head lamp and sleeping pad). You will need to reserve this equipment the first week of school.

Postponement/Cancellation of Field Trips: It should be noted that organized field trips are dependent upon safe field conditions. Events such as inclement weather, flooding, or other unanticipated events may necessitate the rescheduling of the trips, sometimes on short notice. The instructors in the course will monitor weather conditions and predictions and will notify each of you via email if the lab field trip will be canceled. **In the event a field trip is cancelled the lab will meet as scheduled in the teaching laboratory, EESAT 358, and the field trip will be rescheduled for the earliest date available.**

Equipment: Collecting equipment will be issued to each student. Although it is possible to wade in the water without them it is recommended that students purchase waders, hip boots or water shoes. Checked out equipment must be returned upon completion of the course. If you decide to drop the course you must obtain a note from the lab instructor certifying you turned in the lab equipment before the course instructor will sign the drop slip, no exceptions. A grade of F or WF will be assigned if equipment is not returned or paid for.

Contact Information: It will be important that I have the ability to contact you in regards to last minute changes in the schedule or field trips: **all of my communications will be made by notices posted either on Blackboard or by OFFICAL UNIVERSITY EMAIL ADDRESSES.** It will be your responsibility to forward this email to your email of choice.

Grade Information: If you are not in class when graded items are returned, or at the end of the semester when grades are posted and would like to know the reason for the grade you received you **MUST see me in person in my office**.

Academic dishonesty in this class is unacceptable and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with 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*. This policy is applicable in lecture and laboratory.

Disability Accommodation: The University of North Texas is committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. 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. Please present you written accommodation request before the 12th class day.