

BIO 323 - 1- 13980-Entomology
College of Arts & Sciences
Syllabus

COURSE INFORMATION

Credit Hours: 4 Credit Hours (lab class)

Special Fees: \$25.00

Class Meetings: MW 0830-1120 Room BBH 354 (or in the field).

First Day of Class: M Aug 27

Final Exam Date and Time: *Wed Dec 12 at 0830*

Course Description: Insects, their identification, classification, habits and ecological relationships with special emphasis on those common to the Chicago area. Lecture, laboratory and fieldwork.

Course Prerequisites: Undergraduate level BIO 150 Minimum Grade of C and Undergraduate level BIO 201 Minimum Grade of C and Undergraduate level BIO 202 Minimum Grade of C

Other Dates Relevant to Our Class

Aug 27 (M) Weekday classes begin on Campus

Sept 3(M) - Labor Day Holiday

Oct 6 (Sa)- Oct 9 (Tu): Fall Break. No Classes

Nov 22- 25 Thanksgiving Holiday. No classes

Dec 10- Last Day of Classes

Dec 11-13 Finals Week

Link to Final Examination Schedule for the school:

<https://www.neiu.edu/academics/sites/neiu.edu/academics/files/documents/drweber3/Fall%202018%20Examination%20Periods.pdf>

FACULTY INFORMATION

Instructor: Dr. M. Readey

Office Location: BBH- 352 B

Office Hours: 1200-1400 MW in office or in a lab as posted;
1030-1130 TR

Phone Extension: Ex 5728

E-mail: mareadey@neiu.edu

COURSE MATERIALS

List of Required Texts / Materials:

Required:

Whitfield, *Daly and Doyen's Introduction to Insect Biology and Diversity*. Oxford University Press, Third Ed. (Required). ISBN: 9780199873784

Various articles to be determined or as listed as the week's readings.

- 1 field pinning box (grooved base)
- 2 insect storage boxes (cardboard) with polystyrene foam base
- 1 package of 100 size #0 insect pins
- 1 package of 100 size #2 insect pins
- 1 set of label pins (about 100 per student)
- 1 3-step pinning block
- 1 curved pinning forceps
- 1 spade-tipped butterfly forceps

Highly recommended:

Castner: *Photographic Atlas of Entomology*. Feline Press. ISBN: 9780962515040

An angled Exacto knife with a cover. (beats our scalpals!) Available at any arts store. Closest: Lakeview Arts on Foster. Also at Office Max.

Small Soft Brush (point or round). Sable or squirrel is excellent for this purpose because their soft fur are relatively safe for your specimens. *Avoid cheap brushes and nylon brushes* because they can damage your insects.

additional pin numbers can be useful, esp. #00 and #1. IF you want to use these, THEN I recommend that you team with one or two friends in the class and purchase these pins on your own through an on-line supplier. Half a package or less each should suffice.

Required Materials to be scrounged from home:

Collecting insects sometimes requires using unconventional methods. Some of the things you will want to have over the course of the semester include:

3 or more 1- 2-liter bottles

1 plastic box with a lid (I recommend recycling a disposable cookie or cake container that you may have gotten from the grocery store. If you work with insects in small batches, any plastic meal container will work. (more on this on the first day of class)

An incandescent black light (compact fluorescent lights do not work as well)

An aluminum container (or one lined with aluminum foil) that has some depth to it.

An old or cheap umbrella.

Other household materials as needed to create collecting traps!

I will provide you with:

Plastic bread bags (I will provide you with some of these on the first day of class; they are easy to find in rural dollar stores, but next to impossible in the city.)

Yellow collecting bowls

ONLINE READING LIST

Week 1:

Nice overview of insects through a dissecting scope

https://www.youtube.com/channel/UC_kn_A791lsg_gXa98JRJUw?v=FDPVwylsIP8

Heat-Degree Days

<http://mrcc.isws.illinois.edu/gismaps/gddinfo.htm>

<http://www.degreedays.net/introduction>

<http://vesma.com/ddd/ddcalcs.htm>

<http://ipm.ucanr.edu/WEATHER/ddconcepts.html>

<http://www.sws.uiuc.edu/warm/pestdata/sqlchoose1.asp?plc=>

Setting up your own body farm

http://www.theforensicteacher.com/body_farm_4U.html

Insect Pinning and Curation

https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=0ahUKEwicvMPBxYXOAhUn5YMKHfNiDfUQjhwIAw&url=http%3A%2F%2Fextension.oregonstate.edu%2Fumatilla%2Fsites%2Fdefault%2Ffiles%2FPINNING_INSECTS.pdf&psig=AFQjCNHuwYP TNC5Lsv71tAbRU4ZYSKSw2Q&ust=1469224392336386&cad=rjt

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=0ahUKEwjt5z5xYXOAhVC5oMKHRqjDicQFghRMaC&url=http%3A%2F%2Fextension.oregonstate.edu%2Fumatilla%2Fsites%2Fdefault%2Ffiles%2FPINNING_INSECTS.pdf&usq=AFQjCNHLZTqVx 1MOnODtWA54Hy8gTWOONA&sig2=ikM-ugoNcNc4YoexRu1Hw&cad=rja

https://entmuseum.ucr.edu/specimen_preparation/

Week 2

Forensic Entomology:

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwi138CknIXOAhXipYMKHX2cCNs QFgggMAA&url=http%3A%2F%2Fwestada.org%2Fcms%2Flib8%2FID01904074%2FCentricity%2FDomain%2F1794%2Fch%252013%2520Forensic%2520Entomology%2Fch%252013%2520Book.pdf&usq=AFQjCNGAK9NsGQjScInEnzPosLqjjsYehQ&sig2=e9IM11ww9GKLk1Sit z5AOQ>

Death Scene Data Forms

<http://www.nij.gov/topics/law-enforcement/investigations/crime-scene/guides/death-investigation/pages/document-body.aspx>

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwilzZKGoXOAhXL44MKHYwmDcMQFgggMAA&url=https%3A%2F%2Fmsu.edu%2F~merritr%2FDVD_DEATH_FORM.pdf&usq=AFQjCNEFIpa7IGZLNpwpYj08h08pft0gqQ&sig2=ZrCN QpJgc_D_rpPpDghDSQ&cad=rja

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&ved=0ahUKEwilzZKGoXOAhXL44MKHYwmDcMQFgg6MAg&url=http%3A%2F%2Fwww.psdiver.com%2Fimages%2FEntomological_Death_Form.pdf&usq=AFQjCNHV9vMldSahaMUHQ8bZTCIMmlzNIQ &sig2=cNiXK6656SewgTUW8PISxg&cad=rja

https://en.wikipedia.org/wiki/File:Death_scene_form.jpg

Week 3a: Preparation for the Grasshopper Anatomy:

External Anatomy 1: <https://www.youtube.com/watch?v=wfQqk03joS4>

Note the mouth parts carefully!

Internal Anatomy 2: <https://www.youtube.com/watch?v=GYdPn8DCI8A>

<https://www.youtube.com/watch?v=wfQqk03joS4>

Now, let's place the anatomy in the context of the insect's world:

<https://www.youtube.com/watch?v=DITGzEBdWLM>

<https://www.youtube.com/watch?v=wM1DgihKHVI>

<https://www.youtube.com/watch?v=uURqcI08IC4>

1955 Film on Grasshopper Control: https://www.youtube.com/watch?v=_yK_7SMd9Ps

Our Lab: <http://lanwebs.lander.edu/faculty/rsfox/invertebrates/romalea.html>

Week 3b: Insect Anatomy

Wing Venation: <http://bugguide.net/node/view/225965>
<https://www.amentsoc.org/insects/fact-files/wings.html>

WINGS KEY: <https://www.cals.ncsu.edu/course/ent425/tutorial/wings.html>

LEGS KEY: <https://www.cals.ncsu.edu/course/ent425/tutorial/legs.html>

THORAX KEY: <https://www.cals.ncsu.edu/course/ent425/tutorial/thorax.html>

WEEK 4

Phylogenomics of Insects

<http://science.sciencemag.org/content/346/6210/763> (Paper in Library on Reserve)

<http://www.aaas.org/news/science-insects-evolved-earths-first-land-plants>

Flea Anatomy: <http://lanwebs.lander.edu/faculty/rsfox/invertebrates/ctenocephalides.html>

Bottle Fly (Forensics) Anatomy: http://entnemdept.ufl.edu/creatures/livestock/flies/lucilia_sericata.htm
http://www.fcps.edu/islandcreekes/ecology/blue_bottle_fly.htm

Butterfly wing anatomy: <http://www.enchantedlearning.com/subjects/butterflies/anatomy/Wings.shtml>
https://commons.wikimedia.org/wiki/File:Butterfly_wing_skeleton-01.svg

Japanese Beetle: <http://lanwebs.lander.edu/faculty/rsfox/invertebrates/popillia.html>

Week 5

Relaxing and Pinning Lepidoptera

<https://www.youtube.com/watch?v=mXeDcixNiq0><https://www.youtube.com/watch?v=VlLrIN1HjE>

<https://www.youtube.com/watch?v=7DWwBL8MU8w>

<https://www.youtube.com/watch?v=fO1u-wlaoO8>

<https://www.youtube.com/watch?v=Yg9bvd5jdXE>

<https://www.youtube.com/watch?v=Yqk-QUROoBA>

Week 8

Economic Entomology

<http://jee.oxfordjournals.org/> (current articles TBA)

Week 9

Medical Entomology (Ask for instructions)

Asian Tiger Mosquito, *Aedes albopictus*: http://jme.oxfordjournals.org/page/Asian_Tiger_Mosquito_Collection

Ticks: <http://insectscience.org/content/special-collection-tick-integrated-pest-management>

Week 10

Insect Products: Gall Ink

<http://www.instructables.com/id/Making-Iron-Gall-Ink/>

http://irongallink.org/igi_indexc33a.html

Week 12-13

Integrated Pest Management

Gardening & overview: <http://www2.ipm.ucanr.edu/WhatIsIPM/>
<https://www.youtube.com/watch?v=PRm4jnxCeMw>

IPM Soil: <https://www.youtube.com/watch?v=87VtpvnHSJ4>

AgroForestry: <https://www.youtube.com/watch?v=PRm4jnxCeMw>

Alley Cropping: <https://www.youtube.com/watch?v=oJSYT26pq6k>

Optional, for more extensive information: <https://www.youtube.com/watch?v=VV0HrSJ6sHU>

Week 14

Pesticides

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2984095/>

https://www3.epa.gov/caddis/ssr_ins_int.html

Week 15

Aquatic Entomology: Poffetal, 1997

https://www.google.com/url?sa=t&rc=j&q=&esrc=s&source=web&cd=1&ved=0ahUKewjJuL3Go_PNAhUpYMKHVM4B98QFggjMAA&url=http%3A%2F%2Fwww.fs.fed.us%2Fstream%2FPoffetal_1997.pdf&usg=AFOjCNGHzMkh1Qw6Q35WkBRx49GB_cPRWg&sig2=UUZInUGTgWIXgeCu19h8IA&cad=rja

Tops Schools for Entomology

<http://www.phds.org/rankings/entomology>

COURSE OBJECTIVES / STUDENT LEARNING OUTCOMES

By the end of this class, students should be able to

- identify the orders of insects and the important families of insects, with a focus on those insects that can be found in the Chicagoland area
- use insect morphology to key insects using a dichotomous key
- produce and curate a professional insect collection
- understand basic insect anatomy and physiology
- understand insect neural anatomy
- describe the major evolutionary history and lineages of the insects
- compute degree days as they relate to forensic entomology and agricultural entomology
- sex some of the common insects
- describe insect developmental sequences
- apply the information they learn about insects to problems of integrated pest management
- explain what entomological information is collected at a crime scene and why it is collected.
- describe the expected order of cadaver colonization by flies and beetles in the Midwest
- explain how colonization by insects can provide a window for time of death and how it can create post mortem damage that mimics the appearance of wounds
- explain how several common pesticides work
- demonstrate time-management and independent-work skills by completing materials on schedule.

STUDENT TASKS / ASSIGNMENTS / REQUIREMENTS

Examinations:

Midterm Concept Examination: 100 pts

Final Concept & Practical Examination: 100 points

Midterm Laboratory Examination (site identification): 100 points

300 pts

Projects:

Degree Day Assignment: 50 pts (to check understanding of forensic work)

Forensics Project: 150 points

Insect Collection: 200 points

400 pts

Other miscellaneous points will not exceed 50 bonus points.

Total points for semester: 700 points

Grading Policies and Formulae:

Note that the bulk of your grade depends upon your practical field work. You are responsible for doing much of this work outside of class time. I will help you as much as I can during the course of the semester. *For your final project, you can have no more than 10 specimens in vials.*

There are 700 points that can be earned across the course of the semester. Most of these will be based upon your lab and field work, or on the analysis of your lab and field work.

630 \geq A

629- 560 = B

559-490 = C

489 – 420 = D

419 > F

Possible Bonus Point sources:

Above and beyond on the collection

Live Mantids collected for Dr. Prete and Dr. Shermer (must get a note from them)



Insect Rearing


3-6 points for collecting pyralid butterflies during the two weeks only! (2 pt each). They must be in good shape. (i.e., must be done in time for the behaviour study)

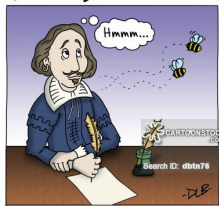


Shared trap designs (functional unit must be built and demonstrated); 3 pts per functional trap presented up to 3 traps; cannot be one discussed in class. Check with me before proceeding on an idea. (Must be presented in time for other students to use.)


Bee Keeping: If you take a class in basic bee keeping or bee conservation during the semester, and can prove that you took the class, I will award points based upon your performance in the class and the quality of the class materials. (up to 10 pts).

TENTATIVE Course Outline:

Week		M	W	Readings and Homework to be Done Before Class
1	Aug 27,29	<p>Lec: Introduction</p> <p>Lab: Introduction to collecting and safety</p> <p>Intro to Forensic Entomology;</p> <p>wasp gall collection through semester.</p> <p>How to collect white butterflies!</p> <p>Discussion of Readings</p> <p>Lab Lecture: Entognata; Archeognatha:</p>	<p>Lab: : Forensic Entomology 2;</p> <p>Pinning</p> <p>Field collection, alternative day</p> <p>Sign Lab Safety</p>  <p>Agreements</p> <p>https://encrypted-tbn3.gstatic.com/images?q=tbn:AND9GcQdllyvdVc7j-Tn9_J7ZgU_j26gLSnrYo0t6G0kiYHPKP-FISb8</p>	<p>D & D: 1; Skim 16 and 18-19</p> <p>Overview website</p> <p>Heat-degree Day web sites.</p> <p>Setting Up your own Body farm web site.</p> <p>Insect Pinning web sites</p> <p>Setting Up your own Body Farm web site (Great for future teachers!)</p> <p>Collect and Freeze 2-5 white butterflies (white cabbage butterfly) by the end of this week and store them.</p> <p>NB: In addition to collecting the larvae and pupa at the “crime scene”, we will also need to rear them on rotten meat. We will need volunteers to start the process after class this day. Everyone will participate in this project</p>
2	Sept 5 only	<p>Labor Day; No Class</p>  <p>https://www.cartoonstock.com/cartoonview.asp?artist=deh110125&ANDkeywo... file&NOTheywof&TTH.Ekeywof&cat&group&AllCategories&Artist&AllArtis... &main&Active&main&Active&New&Cartoon&New&Cartoon&New&Cartoon&New&Cartoon... p1on1-color&colorOption2-BlackWhite&orientationOption1-portrait&orientation... Option2-landscape&size=500limit=2</p>	<p>Field Work (weather permitting) at North Park Nature Center 0830</p> <p>OR Lec: Degree Days; (If we have storms, we will go to NPV next Monday)</p> <p>Discussion of Readings</p> <p>Lab Lec: Forensic Entomology 1: Lab: Forensic Entomology 1 Set up</p>	<p>D & D 1; Forensic Entomology web sites;</p> <p>Download Death Scene Data Forms for discussion:</p> <p>Collect and Freeze 3-5 large grasshoppers for dissection lab. Collect and freeze 2-3 milkweed bugs or stink bugs for dissection; Collect and freeze adult and juvenile mosquitoes for observation under the dissecting scope.</p>

3	Sept 10, 12	<p>Lec & Lab Orders Ephemeroptera and Odonata</p> <p>Lab: How to collect soil and litter insects. More on Berlese funnels and pitfall traps; forensics and field work continued;</p> <p>Lab Lecture: Introduction to Pinning</p> <p>https://www.cartoonstock.com/directory/b/beetles.asp → →</p>	<p>Lect: Insect Anatomy 1: External Anatomy & Wing Structure. Orders Blattodea and Mantodea</p> <p>Lab: Grasshopper Dissection; Forensic project continued. Lab Lecture: Behavior</p> 	<p>D & D 2, 3, beginning of 20-23 The Insect Body & The Integument</p> <p>Lab Prep: Week 3a videos & readings: Grasshopper anatomy</p> <p>Week 3b: Insect Anatomy web sites (important for identification of insects)</p> <p>Collect and freeze 3-5 bottle flies (Calliphoridae) for next week's lab.</p>
4	Sept 17, 18	<p>Lec: Insect Anatomy II. Lab Lecture: Dermoptera and Plecoptera</p> <p>Anatomy: Mosquito; flea; butterfly wing bottle fly; Japanese beetle</p> <p>Lab: Design Butterfly Studies</p>	<p>Lec: Remipedia Phylogeny of the Insects Lecture Orthoptera and Phasmatodea</p> <p>Lab: Outdoors: Butterfly behaviour (Or the Bugs who loved cat dancing)</p>	<p>D & D Beginning of chapters 26, 27, 29, 30</p> <p>View Phylogenomics of Insects websites;</p> <p><i>Read article on reserve in the library.</i></p>
5	Sep 24, 26	<p>Lab Lecture: Psocoptera and Phthiraptera; Trichoptera, Lepidoptera;</p> <p>Lab: Labeling, pinning and spreading Lepidoptera!</p>	<p>Lab Lecture: Heteroptera and Homoptera; Forensics Lab continues; End of Forensics Lab, outdoor portion</p> <p>Crunching the numbers on the butterfly lab</p>	<p>D & D Beginning of Chapter 32, 33, AND 34 , 45-46</p> <p>Watch Lepidoptera Videos!</p>

6	Oct 1, 3	<p>Lab Lecture: Megaloptera Raphidioptera, and Neuroptera; Diptera</p> <p>Lab: Forensics and Identification continued.</p>	<p>Lab Lecture: Coleoptera and Diptera Lab: Pinning and Identification Day; Roughly the end of Forensics Lab data collection</p> <p>https://www.cartoonstock.com/directory/h/honey_bees.asp --></p>	<p>D & D Beginning of Chapters 36- 39, 43</p> 
7	Oct 10 only	<p>Fall Break</p>  <p>https://www.cartoonstock.com/directory/b/beetles.asp</p>	<p>Lecture: Insect growth and development; Hymenoptera and Mecoptera</p> <p>Forensics Lab: Data Crunching and Discussion</p> <p>Prep for midterm!</p>	<p>D & D Chapter 4 and the beginning of Chapter 41 -42</p>
8	Oct 15, 17	<p>Lec: Economic Entom. 1: Agricultural Entomology;</p> <p>Some odds and ends: remaining common orders</p>	<p><i>Midterm Exam</i></p> <p><i>Identification Lab</i></p>	<p>Economic Entomology readings</p> <p>Ask for direction on Medical Entomology Readings! (Group presentations for bonus!)</p>
9	Oct 22, 24	<p>Lecture: Medical Entomology 1:</p> <p>Identification Lab</p>  <p>http://www.milfordmirror.com/21428/state-cautions-west-nile-still-a-threat/</p>	<p>Lecture Medical Entomology 2</p> <p>Identification Lab</p> <p><i>Final Due Date for Forensics Lab Results (extended only if insects have not yet eclosed)</i></p>	<p><i>Homework: collect oak gall; bring in season's oak galls by next week! If you find some large feathers, you can also make your own quill pens too!</i></p> <p>D & D 12</p> <p>Web pages on Medical Ent.</p>

10	Oct 29, 31	<p><i>Practical Exam: Identification to order and to family</i></p> <p>Economic Entomology 1: Agricultural Entomology;</p> <p>Ink Lab prep 1: bring in the galls you have collecting done outside of class time. Grind and soak them today</p>	<p>Lec: Economic Entomology 2: Bee keeping 101</p> <p>Lab: Ink</p>	<p>read web materials on ink production, and we'll spend a bit of well-earned down time making homemade ink for the holidays!</p> <p>(Great gift for your favourite artist! bring bottles for your ink!)</p> <p>Friday or Saturday Pinning Party!</p>
11	Nov 5, 7	<p>Insect Neuroanatomy</p>  <p>https://www.cartoonstock.com/cartoonview.asp?catref=gra070512&ANDkeyword=praying+mantis&NOTkeyword=&TITLEkeyword=&categories=All+Categories&artists=All+Artist&mainArticle=mainArticle&newsCartoon=Cartoon&image=viewport&colorOption1=colour&colorOption2=blackWhite&orientationOption1=portrait&orientationOption2=landscape&cp=0&limit=12</p>	<p>Insect Behaviors</p> <p><i>Insect Collections Are Due on Friday by the Close of School!</i></p>	<p>D & D 6</p> <p>Insect Collections Are Due This Week!</p> <p>Catch-up & begin readings on IPM</p>
12	Nov 12,14	<p>Integrated Pest Management 1</p>	<p>Integrated Pest Management 2</p> <p>Thresholds for Management</p>	<p>D & D 13 IPM</p> <p>Web materials on IPM</p>
13	Nov 19,21	<p>Introduction to Insecticides</p>	<p>How Insecticides Are Used; Insecticide toxicity and the Environment</p>	<p>Online readings on insecticides</p>
14	Nov 26,28	<p>Insecticide resistance; Neonicotinoids</p>	<p>Student Choice or Catch-up</p>	<p>Online readings on insecticides</p>
15	Dec 3, 5	<p>Lec: Aquatic Entomology 1</p> <p>Lab: Identifying Aquatic Larvae</p>	<p>Parasitoids and Biocontrol; Review for Final Exam</p>	<p>Poffetal, 1997</p>
16	Dec 10, 12	<p>Entomology graduate programs and careers</p>	<p><i>Final Exam 0800 Dec 12</i></p>	<p>Web materials on the top colleges for entomology</p>

COURSE POLICIES AND STATEMENTS

Absence Policy:

ATTENDANCE: Department instructors may reassign a student's seat in a class if the student does not attend the first class session and neglects to inform the instructor in advance of the intended absence. The student will be responsible for any financial consequence if the course is not dropped officially by the student before the appropriate refund deadline. Failure to officially withdraw from class will result in a grade of F." NB: Cited from the Schedule of classes, inside front cover: "POLICY ON FIRST CLASS SESSION":

Attendance is mandatory; Missing laboratory and lecture time leads to reduced grades. If you must miss class because of religious, family or medical obligations, please let me know so we can find a way to keep you on track. Be aware that class participation points and random attendance points cannot be earned or made up if you are not present in class.

Religious Conflicts: I have done my best to avoid scheduling exams on religious holidays. However, in our multicultural society, it is not always possible to be aware of every holiday for every religious denomination. *Check the class schedule against your own schedule of religious holidays as soon as possible.* If you have a religious obligation that conflicts with exam schedule, arrangements can be made, but must be made in advance.

Late assignments:

Assignments late by one day will receive a 10% grade reduction. Any assignment that is more than one day late will not be graded and will be recorded as a zero.

Missed Examinations:

Typically, there will be no make-ups on examinations without a serious, acceptable, and verifiable reason. If you must miss an exam for a family emergency or a religious conflict, you must notify your instructor and present proof of the conflict.

Policy for Practical Examinations

One should strive to be on time for all examinations. However, Practical Examinations can involve the observation of specimens on slides or at stations. *Being late for a practical exam disrupts your fellow students. Come early for practical exams! Late entry for a practical exam will not be compensated with additional time to complete the materials. You simply will miss whatever questions have been asked to that point.*

The 2-day Lock-Out Period

To discourage cramming, I will not answer any questions about examination material starting the day before an examination. This rule does not apply to quizzes!

Academic Integrity Policy:

By enrolling in this course, you are bound by the NEIU Student Code of Conduct:

<http://www.neiu.edu/university-life/student-rights-and-responsibilities/student-code-conduct>. You will be informed by your instructor of any additional policy specific to your course regarding plagiarism, class disruptions, etc.

***ACADEMIC DISHONESTY** includes giving, receiving, or using unauthorized aid on any academic work. This includes a person who has taken a test discussing what was on a test with a person who has not taken the test. Any student guilty of cheating—including-- plagiarism will receive a grade of F.*

ADA Statement:

Northeastern Illinois University (NEIU) complies with the Americans with Disabilities Act (ADA) in making reasonable accommodations for qualified students with disabilities. To request accommodations, students with special needs should make arrangements with the Student Disability Services (SDS) office, located on the main campus in room D104. Contact SDS via (773) 442-4595 or <http://www.neiu.edu/university-life/student-disability-services>.

Campus Safety:

Web links to Campus Safety: Emergency Procedures and Safety Information can be found on NEIUport on the MyNEIU tab or as follows:

http://homepages.neiu.edu/~neiutemp/Emergency_Procedures/MainCampus/.

Web Link to Emergency Information: It is recognized that a safe university environment is a shared responsibility of faculty, staff, and students, all of whom are expected to familiarize themselves with and cooperate with emergency procedures. Web links to Campus Safety: Emergency Procedures and Safety Information can be found on NEIUport on the MyNEIU tab or as follows:

(a) For the Main campus:

http://www.neiu.edu/~neiutemp/Emergency_Procedures/MainCampus/

(b) For El Centro(English version):

http://www.neiu.edu/~neiutemp/Emergency_Procedures/ElCentro/

(c) For El Centro(Spanish version):

http://www.neiu.edu/~neiutemp/Emergency_Procedures/ElCentro_Spanish/

(d) For CCICS:

http://www.neiu.edu/~neiutemp/Emergency_Procedures/CCICS/

(e) For Chicago Teachers Center(CTC):

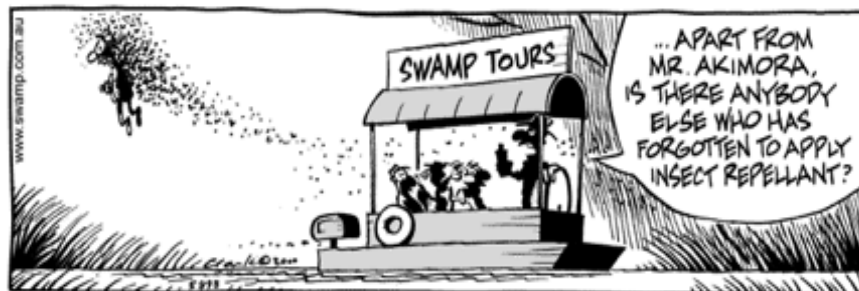
http://www.neiu.edu/~neiutemp/Emergency_Procedures/CTC/

COLLEGE POLICY CAN BE FOUND AT:

<http://www.neiu.edu/about/sites/neiu.edu/about/files/documents/arrempas/E2.1%20Emergency%20Notification.pdf>

ADDITIONAL ELECTIVE INFORMATION

1. 10% of the grade for an assignment is deducted if it is one day late. After 2 days, the assignment will be given a zero unless provable extenuating circumstances exist and they are accepted by the instructor.
2. This class requires the collection, handling and euthanizing of insects. Most of these organisms are near the end of their life span in the fall, and we will emphasize humane euthanization wherever possible. Their fate in nature would typically be far worse than their fate in your hands. Still, if you are not comfortable euthanizing insects, you need to be aware of this problem
3. You will be required to do field work. Any fieldwork entails some risk, including unfriendly encounters with the world of arthropods and plants. If you have a known bee or wasp allergy, or another sensitivity that can interfere with your ability to produce your collection, you need to let your instructor know. You will be shown how to safely collect most specimens and how to collect wasps and bees with a reduced the risk of being stung.
4. Warning! Formaldehyde is considered a contact poison. It can penetrate vinyl gloves. When handling specimens, you should use latex gloves (exam gloves, not dish-washing gloves). If you are allergic to latex, there are substitutes available at drug stores. You must, however, wear gloves whenever handling preserved specimens. If you collect your own specimens, you can reduce your contact with formaldehyde and other preservatives. f you are pregnant, think you might be pregnant or are considering becoming pregnant, then consult your ob-gyn before taking this class. Contact with chemicals, including formaldehyde, may adversely impact the fetus.



<http://www.swmosquito.org/mosquito-information/protection-deet-faqs/>

5. Mosquitoes are the primary predators of humans, and they are the most dangerous one. Protect yourself by wearing long sleeves, pants, socks, and closed-toed shoes whenever you are doing field work! Tuck your pants into your socks to prevent ticks from attaching. Use DEET or the repellent of your choice to minimize risk.

6. This class will involve some mathematics. The necessary concepts will be taught within the context of the class, but a basic understanding of algebra is expected. If you have a math phobia (common among biology majors), you will be responsible for making appointments with your instructor or with another resource professional to help you past those bumps.

Other Stuff:

1. If you are in the honours section, additional criteria will apply.

2. *It is unlikely that you will earn an acceptable grade if you do not attend class regularly, because my lectures are key components of the exams.* Attendance alone does not guarantee a passing grade.

3. It is important that you take complete and comprehensive notes of the lecture material.

4. It is also essential that you study regularly. **The material in this class does not lend itself to cramming.**

5. One cannot learn to recognize organisms and their systems by site during crammed class periods. Expect to spend at least 3-5 hours per week in the lab studying the materials on your own.

6. **Reading the assigned websites or texts beforehand will help you better understand the lecture material, and it will make you classmates perceive you in a better light.** This perception can influence how willing they will be to help you if you get stuck or have too few specimens, or their willingness to partner with you in the future.

7. *After each lecture, you should reread and/or rewrite your notes and read the material in the websites again to make sure that you correctly took the notes and fully understand the material that was covered.* Rewriting the material longhand is a far more effective memory tool than typing into a computer. Try using two columns, the first listing broad concepts, and the second containing a list of facts and supportive evidence linked to that concept.

8. *After reviewing the lecture notes, go to the assigned textual readings in the library.* I recommend the following method of reading the materials to minimize the amount of time you need to spend on them.

1. Find a quiet corner away from the main routes. (You do not need to know the comings and goings of everyone in the library at this time.)

2. Orient your self to the materials first by reading the chapter headings and the summary/ summaries of the assigned reading.

3. Read the captions and look at the figures.

4. Then preview the text one more time, and this time also read the first line of each paragraph.

5. Now read the text. Because you have already oriented yourself to the materials, the actual reading should take less time than you might otherwise have spent on it.

9. *Prior to the exam, use the study guide to re-assess whether you have learned the material, but do not depend on this guide as quick way to cram.*

10. Study Suggestions for Introductory Biology from other universities. Try some of the following links (available on line): E.G.: University of Miami

11. Talking or other disruptive behaviour during lecture will not be tolerated, and you may be asked to leave.

12. **Academic dishonesty includes giving, receiving, or using unauthorized aid on any academic work.** This includes a person who has taken a test discussing what was on a test with a person who has not taken the test. Any student guilty of cheating—including-- plagiarism will receive a grade of F.

Learning Support Center

The Learning Support Center (LSC) provides peer-directed academic tutoring for individuals and groups in the following areas:

- General Education courses
- Writing
- Reading
- Math Development and college level math
- Academic Coaching

The primary emphases are promoting active learning strategies, encouraging student engagement, and providing content support. Academic support is provided to students who are seeking assistance with understanding course concepts and preparing assignments, along with developing an improved learning system for college which includes motivation, academic engagement, brain-based habits for college learning, and learning strategies for note taking, textbook reading, and test taking.

Tutors are graduate and undergraduate students who are carefully selected on the basis of their own academic achievement by faculty and given supervision, training, and support to serve as tutors, mentors, and academic coaches. Additionally, the LSC provides all NEIU students an area for learning groups and an opportunity to learn with other students. Appointments are strongly encouraged, and students are welcome to drop in to discuss their individual academic support needs.

For more information, visit the LSC website at www.neiu.edu/lsc or, to schedule an appointment with a tutor, call 773-442-4568.

Center for Academic Writing

The Center for Academic Writing (CAW) provides peer tutoring for students enrolled in officially-designated Writing Intensive Program (WIP) courses. WIP peer tutors, who are recommended by faculty and hired and trained by CAW, are affiliated with specific WIP courses and provide discipline-specific writing support. WIP peer tutors help students of all abilities become better writers by helping them focus on every step of the writing process - from brainstorming ideas, prewriting, and outlining, to drafting, revising, and editing. Students do not need to have a completed draft to meet with a WIP peer tutor. WIP peer tutors can provide the most effective help if students come early in the assignment process and return throughout the semester.

Students should speak with their WIP course instructor and/or contact CAW for more information about WIP peer tutoring. Information is available on the web at www.neiu.edu/caw. Students can stop by CAW on the fourth floor of the Ronald Williams Library or call 773-442-4492 to make an appointment.

Course Communication

All pertinent class communications between the instructor and students is conducted exclusively through NEIU e-mail. Thus it is the responsibility of students to check their NEIU e-mail account for all significant information and updates on class cancellations in the event of threatening weather conditions. *Communication between the instructor and students via personal e-mail accounts (e.g., @gmail.com or @yahoo.com) will not occur.*

Incompletes

An "I" (incomplete) may be given if a student is absent from the final examination or fails to complete a special research or individual study project *because of some unavoidable circumstance such as illness*. It is not an automatically assigned grade. ***Failure to take the final without evidence of extenuating circumstances will result in the assignment of a zero for that test. I seldom assign incompletes. Incompletes will NOT be assigned due to low grades alone.***

Students will have two semesters (including Summer) after the incomplete grade has been assigned to remove the incomplete. Incompletes that have not been removed within two semesters will be changed to an "F" grade. This policy does not apply to Thesis Seminars or master's project seminars.

Late Work

Late work is strongly discouraged. Turning in work late can impair your chances of success in the course. This late work policy applies to all graded assessments (including the final examination) in the course, with the exception of the discussion threads. Because class discussions require us all to participate during the week when they are active, *no make-up or late credit will be allowed for discussion participation. I understand that unexpected things can come up, so the late-work policy for our course is outlined below.*

Serious Emergencies: For serious emergencies, your instructor will decide whether your late work may be accepted for full or reduced credit. Serious emergencies include things like *serious* illness, accidents, natural disasters, and university server outages. E-mail your instructor the information about your emergency and request approval to make up the assignment, lab, quiz, or exam. If you receive approval, make up the work according to the plan set by you and your instructor.

All Other Unexcused Late Work: Unexcused late work includes course work that is turned in late because of things like job-related, technical, or other personal issues. Your instructor will decide whether your late work may be accepted. Your instructor will impose a per diem late penalty of 10% for one late day. In the absence of extenuating circumstances, assignments will not be accepted after two days. To request an extension on an assignment, please request approval BEFORE the final deadline.

Submission of Assignments: Students are expected to complete all assignments. Failure to submit any assignment will result in ***a zero on that assignment and an additional deduction of 10 points (from point total) per missing assignment***. If homework solutions are shared with the class, your instructor reserves the right to decline to accept late work after the sharing of the solutions, or to require that an alternative assignment be completed, if one is available. Only one unexcused, non-emergency late submission will be allowed per student per course.

Submission of Materials

Written assignments will be submitted electronically. Any student file submitted electronically that does not meet the requirements listed will not be graded. Please ensure that files are

- appropriately named (last name-Document title),
- submitted in Microsoft-Office format (e.g., .doc, .docx, .xlsx, .pptx or Apache Open Office Formats),* and
- submitted to the corresponding Dropbox folder within D2L (do not email it to my nmail account! It will get lost.)

While you are not required to use Microsoft Office products, please ensure your productivity applications are able to import/export into the compatible file formats