

COURSE SYLLABUS — AQUATIC INSECTS

Summer 2010

Department of Entomology

College of Agricultural Sciences and Natural Resources/IANR

University of Nebraska-Lincoln

I. Catalog Description

Entomology 402/802 Aquatic Insects (Biological Sciences 485/885; Natural Resources 402/802) (2CR I) Lec 2. Prereq: 12 hr biological sciences or permission. Biology and ecology of aquatic insects.

II. Instructor Dr. Steve Danielson, 211 Entomology Hall, UNL, Lincoln, NE 68583-0816
Phone: 472-8693 FAX: 472-4687 Email: sdanielson1@unl.edu

III. Course Objectives

1. Describe the physical and chemical characteristics of aquatic habitats which limit the number and kinds of insects present.
2. Describe food habits, diagram seasonal and life cycles, name habitat types occupied, and state role in the food chains for the aquatic insect orders.
3. Describe the adaptations of the aquatic insect orders that enable them to occupy different aquatic habitats.
4. Based on the insect taxa present, describe the types of aquatic habitats that are indicated including unique chemical or physical environmental characteristics.
5. Understand the techniques involved in aquatic insect sampling and preservation.
6. Explain how insects can be used to monitor or assess the quality of an aquatic habitat and describe an example of a biomonitoring technique from each of the six hierarchical levels of biomonitoring programs.

IV. Need or Justification

This course is designed to provide specific information which is relevant to a wide range of students including those majoring in insect science, natural resources, environmental studies, biological sciences, and education. It will be particularly useful for those students who are planning careers that will involve the study of environmental quality assessment and improvement.

V. Methods

The course is designed with narrated Powerpoint lectures on Blackboard that will be supported by readings from the text and selected articles from journals or references. All students will be required to prepare a term paper and a presentation will be made by each student on this term paper.

VI. Course Outline

Assigned readings are chapters in text indicated in parentheses.

Lecture/Discussion Topic

Introduction, Morphology, and Metamorphosis (1 & 2)

Insect Classification and Identification (2 & 6)

Sampling and Preservation (4)

General Ecological Relationships (3)

Respiration, Habitats, and Life Histories (3)

Bioassessment (handout on Blackboard)

Midterm Exam

Ecology of Ephemeroptera (7)

Ecology of Odonata (8)

Ecology of Plecoptera (9)

Ecology of Hemiptera (10)

Ecology of Diptera (16)

Ecology of Megaloptera and Coleoptera (11 & 13)

Ecology of Trichoptera (14)

Term Paper Presentations

Final Exam

VII. Textbook

McCafferty, W. Patrick. 1981, 1998. Aquatic entomology: The fishermen's and ecologists' illustrated guide to insects and their relatives. Jones and Bartlett Publishers, Boston.

VIII. Disabilities

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

X. Term Paper/Essay Requirement

Students in this class are required to do a written assignment for a total potential of 50 points out of the 250 possible for the semester. Students should discuss their ideas for the term paper with the instructor early in the semester (i.e. well before the mid-term exam) and **a typed, one page proposal for your idea for this term paper must be submitted for approval by the instructor by the time of the mid-term exam** in order to receive 10 points of the 50 allowed for the assignment. Term papers should be typed, double-spaced, and six to ten pages long with at least ten references. **All students are required to send a Powerpoint presentation summarizing their term paper to the instructor before the final week of classes, so they can be posted on Blackboard.**

A written final version of the term paper should be sent to the instructor during the final week of classes. Five points per calendar day will be deducted from your grade if this paper is turned-in late.

XI. Academic Dishonesty:

The University of Nebraska-Lincoln has a clear, succinct, and reasonable policy about academic dishonesty, as indicated in the student code of conduct (www.unl.edu/sja/Student-Record-Policy.pdf). As a student at UNL, you enjoy rights and protections under the code and are obligated to conduct yourself in compliance with the code. One area where students occasionally have some confusion regards plagiarism (which is especially important in this course, as most assignments and exams involve writing). The key concept here (and in other misconduct) is misrepresenting the work of another as one's own. The University Foundations program has a good web site that reviews UNL's policy on academic integrity and academic dishonesty, which you should review (<http://www.unl.edu/UFPAcadinte.htm>).

As the Student Code of Conduct indicates, academic sanctions for misconduct (subject to appeal) are at the discretion of the instructor, and may include giving the student a failing grade for the course. In this course, the least penalty we will impose for misconduct is a one letter grade

reduction in the course grade, however, in most instances (particularly for graduate students) the penalty for cheating in this class will be a failing grade in the course.

XII. Grading Policy

Midterm Exam	100 points
Final Exam	100 points
<u>Term Paper and Presentation</u>	<u>50 points</u>
Total	250 points

Grading Scale

97%	A+
93%	A
90%	A-
87%	B+
83%	B
80%	B-
77%	C+
73%	C
70%	C-
67%	D+
63%	D
60%	D-
below 60%	F