

WORLD OF INSECTS

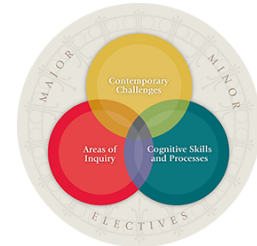
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Number of credit hours: Three (3)

Semester: Fall 2020

Days and times of lectures: T, Th (3:55 PM - 5:15 PM)

Format: Online Course



Instructor: Dr. Chloe Hawkings

Office location: Thompson Hall, Room 132

Office hours: By virtual appointment

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Course Overview: World of Insects is an introduction to the study of insect evolution, diversity, structure, and biological functions as well as an overview on how insects impact various areas of human society.

Prerequisites: None

Course Description: Insects are the most diverse form of animal life on the planet and can be found in every ecological niche. This course will introduce students to general entomology and how insects impact society. We will cover insect evolution, insect biology, and focus on the various applications of entomology including forensic entomology, agricultural entomology, and urban entomology. This course will also introduce students to the diversity of insects and how evolutionary adaptations and biological diversity have resulted in their ubiquity and their importance within ecosystems.

Learning outcomes: This course is aimed at both students pursuing the entomology major and non-major students. The overall objective of this course is to ensure that all students are introduced to the fundamental importance of insects and how entomology can be applied across disciplines.

Link to Entomology Undergraduate Program Goals: <https://entomology.rutgers.edu/undergraduate/>

1. Students should be able to define key concepts and terms relating to insect biology, identification, and evolution covered in lecture materials

2. Students should be able to recognize and identify different insect Orders.

3. Students should be able to describe principles of different fields of entomology and apply course material to demonstrate their ability to solve real world problems.

Resources:

Text: No Text is required for this course

Resources: Relevant and current literature that outline the importance of insects and research. Materials will be distributed weekly through Canvas.

Course Calendar:

Sept. 1: Course outline; How to Navigate this course through a Pandemic; Why study Insects

Sept. 3: Insect Success: Adaptations and Survival

Sept. 8: Insect Development: Growth, Molting & Metamorphosis

Sept. 10: Insect Feeding: Mechanisms and Behavior

Sept. 15: Insect Reproduction: Courtship & Mating *Quiz 1*

Sept. 17: Insect Communication: Emitting and Receiving Messages

Sept. 22: Exam 1

Sept. 24: Arthropod Phylogeny & Insect Origins

Sept. 29: Insect Diversity I: Dragonflies, Grasshoppers and Stick insects

Oct. 1: Insect Diversity II: Praying Mantises, Cockroaches, True Bugs

Oct. 6: Insect Diversity III: Lacewings, Beetles, Flies

Oct. 8: Insect Diversity IV: Fleas, Butterflies, Bees *Quiz 2*

Oct. 13: *Insect Identification Assignment*

Oct. 15: Exam 2

Oct. 20: Insect Plant Interactions

Oct. 22: Insect Pollinators

Oct. 27: Aquatic Insects *Quiz 3*

Oct. 29: Insect Societies and Social Insects

Nov. 3: Insect Predation and Parasitism

Nov. 5: Exam 3

Nov. 10: Agricultural and Forestry Entomology

Nov. 12: Medical and Veterinary Entomology

Nov. 17: Urban Entomology *Quiz 4*

Nov. 19: Forensic Entomology

Nov. 24: Insect Pest Management & Control Strategies *Case study assignment: written portion due*

Nov. 26: Thanksgiving; No Class

Dec. 1: *Problem Assignment Class Discussion I*

Dec. 3: *Problem Assignment Class Discussion II*

Dec. 8: *Problem Assignment Class Discussion III*

Dec. 10: Class end

Dec. 16 - 23: Final Exam

Grading and Assignments:

Exams: This course will have four exams consisting of both multiple choice and short answer style questions which cover material from lectures prior to the exam. The exams will assess the ability of the student to define key processes and terms associated with the lecture material. **All exams are open book and open resource**

Identification Assignment: The identification assignment is given during lecture and is aimed to encourage students to draw connections to the course content and real-world problems. This exercise will require the students to identify an insect based on key morphological traits covered in lecture material.

Students are expected to participate and contribute to class discussions to explain their findings. This problem will assess the ability of the student to relate the morphology discussed in class to actual specimens. **This problem will be given as a quiz style assessment where students are shown images of insects, students may discuss their answers in a group to identify the insects**

Case Study: Students will work to identify an insect pest that causes a real-world problem that entomologists face. Students work to research the insect causing the problem and suggest control strategies for this insect. Students will utilize the lecture material and scientific literature to synthesize class material with practical applications that could be used as a solution to the issue. **Students will write a one-page document about an insect and discuss its relevance to human society.**

Assignment Discussion: Each student should summarize their problem assignment for the rest of the class during discussion. Students will be allocated 5 mins to discuss their chosen topic. Students may use powerpoint to enhance the presentation if they choose. 5 mins will be given for questions. Students will both be graded on the presentation and their ability to engage in questioning

Quizzes: Four quizzes will be assigned at the end of class to assess the retention of material from the previous lectures. Students will be quizzed on their ability to understand and memorize lecture material

Points Breakdown: Total % contributed (course):

	Points	% of course
Exams (60 points each; 15% each)	240	60%
Identification Assignment	40	10%
Case Study Assignment	40	10%
Case Study Assignment Presentation	40	10%
Peer review/ Questions	20	5%
Quizzes	20	5%

Course Etiquette: Attendance is recommended, and participation is required for participation points, failure to participate in discussion will result in a zero. This course requires participation in class activities, discussions, and through questions. A strict late policy is followed in this class, lateness is regarded as absence. Quizzes and handling of grades and assignments will be conducted at the start of the lecture. If you are going to be late, let the instructor know immediately. If you miss a lecture you are responsible for catching up in time for assignments and exams. Missed exams and tests can only be excused through university approved absences. The instructor should be provided proof of university approval no more than one week after the exam date. All assignments are expected to be submitted before the due date. Failure to submit an assignment before the deadline without a university approved absence will result in a zero on the assignment.

No disturbances will be tolerated in class, this includes engaging in disruptive behavior and inappropriate cell phone or laptop use that is not related to the course. We strive to create a positive classroom climate to facilitate all students to be able to learn.

Americans with Disabilities Act (1990): The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please visit the Office of Disability Services or contact their office for further information.

Academic Integrity: The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/academicintegrity-policy>. The principles of academic integrity require that a student: properly acknowledge and cite all use of the ideas, results, or words of others. You must acknowledge **all** contributors to a given piece of work. All work submitted for a course or other academic activity must be produced by the student turning in the assignment or task and is produced without the aid of impermissible materials or impermissible collaboration. All data or results must be obtained by ethical means and reported accurately without suppressing any results inconsistent with his or her interpretation or conclusions. Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress. You are expected to uphold the canons of the ethical or professional code of the profession for which he or she is preparing. Adherence to these principles is necessary in order to ensure that everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments. All student work is fairly evaluated, and no student has an inappropriate advantage over others. The reputation of the University for integrity in its teaching, research, and scholarship will be maintained and enhanced. Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.