Fall 2019

Insect Biology, Entomology 3014

Syllabus

Course Description:

Ants and termites alone have been estimated to compose about 1/3 of the total biomass on Earth. There are about 1.5 million ants per individual human on the planet (10 quadrillion of them). Insect Biology provides a general introduction to the study of this ubiquitous and extremely diverse group of animals. This course covers the spectacular diversity of insects, their anatomy and biology, evolutionary history, and impact on the ecosystem and human society.

Instructor:

Dr. Paul Marek
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Teaching Assistants:

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Course Information:

ENT-3014/BIOL-3014, Tuesday & Thursday, 11:00 - 11:50 AM, Price Hall 220

Website:

Course homepage: https://canvas.vt.edu/courses/98383

Objectives:

(1) To gain an appreciation of the diversity of insects and the basics of their biology, evolution, and behavior
(2) Understand the diverse ways insects have become successful, in terms of their diversity, abundance, and unique morphological adaptations
(3) Glimpse the many services insects provide humans and the biosphere
(4) Become aware of the importance of studying entomology, both in terms of the benefit of insects to human society and as agricultural and human pests

Textbook:

The Insects: An Outline of Entomology, 4th or 5th Ed. by Gullan & Cranston

Honor System:

The Undergraduate Honor Code pledge that each member of the university community agrees to abide by states:

"As a Hokie, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Students enrolled in this course are responsible for abiding by the Honor Code. A student who has doubts about how the Honor Code applies to any assignment is responsible for obtaining specific guidance from the course instructor before submitting the assignment for evaluation. Ignorance of the rules does not exclude any member of the University community from the requirements and expectations of the Honor Code. For additional information about the Honor Code, please visit: www.honorsystem.vt.edu

Course Schedule:

Week	Date	Topic
Week 1	August 27, 29	Importance, Diversity & Conservation of Insects (Ch.1)
Week 2	September 3, 5	External Anatomy (Ch. 2) *Additional reading: Gold bugs and beyond: a review of iridescence and structural colour mechanisms in beetles.*
Week 3	September 10, 12	Internal Anatomy & Physiology (Ch. 3) *Quiz 1 (Sept. 12)*
Week 4	September 17, 19	Sensory Systems & Behavior (Ch. 4) *Additional reading: Peacock Spiders*
Week 5	September 24, 26	Reproduction (Ch. 5)
Week 6	October 1, 3	*Exam 1 (Oct. 1)* Insect Development & Life Histories (Ch. 6)
Week 7	October 8, 10	Insect Systematics: Phylogeny & Classification (Ch. 7) *Additional reading: Arthropod relationships revealed by phylogenomic analysis of nuclear protein-coding sequences*

Week	Date	Topic
Week 8	October 15, 17	Insect Biogeography & Evolution (Ch. 8) *Quiz 2 (Oct. 17)*
Week 9	October 22, 24	Ground-dwelling Insects (Ch. 9)
Week 10	October 29, 31	Aquatic Insects (Ch. 10)
Week 11	November 5, 7	*Exam 2 (Nov. 5)* Movie: *Life in the Undergrowth* David Attenborough
Week 12	November 12, 14	Insect Societies (Ch. 12)
Week 13	November 19, 21	Insect Predation & Parasitism (Ch. 13) *Quiz 3 (Nov. 21)*
Week 13	November 26, 28	*Thanksgiving Holiday, no classes*
Week 14	December 3, 5	Insect Defense (Ch. 14) *Additional reading: Aposematic Coloration, in: Encyclopedia of Insects* *Blog post due (Dec. 5)*
Week 15	December 10	Medical & Veterinary Entomology (Ch. 15)
Week 16	December 14, Saturday	Final exam (7:45AM - 9:45PM, Price 220)

Reading Assignments:

Each week will highlight an individual chapter from the textbook. Students should read the chapter prior to the week's lecture. Additional readings are posted to: https://canvas.vt.edu/courses/98383

Assessments:

A variety of assessment techniques will be used in order to determine whether this course meets its objectives. These will include 3 quizzes, 3 exams, a blog post, and ongoing informal classroom assessments. I encourage you to find your learning style and develop metacognitive awareness, or learning how you best learn (questionnaire that profiles your learning preferences: www.vark-learn.com). I am here to help and I am interested your academic success. I hope to inspire by demonstrating how fascinating insects and science are. I strive to create a positive, respectful atmosphere for learning and I hope that you will contribute positively to an enjoyable classroom environment.

Total Points:

September 12	Quiz 1	50 points
October 1	Exam 1	250 points
October 17	Quiz 2	50 points
November 5	Exam 2	250 points
November 21	Quiz 3	50 points
December 5	Blog post	50 points
December 14	Final exam	300 points
		Total: 1000 points

- Students are required to take quizzes and exams on the scheduled date unless excused by (1) the instructor the day before the quiz or exam is administered, or by (2) written verification from a medical doctor documenting the illness preventing the student from taking the exam or quiz.
- Late assignments will lose 10% of their value each day after 5 pm on the due date. Weekends count as one day. Late assignments will not be accepted more than one week after their due date.
- Feel free to ask me questions about class, entomology, etc. Please use proper etiquette when writing emails: http://goo.gl/GZq4CJ

Grading scale:

IF >93 = A; >89 = A-; >86 = B+; >82 = B; >79 = B-; >76 = C+; >72 = C; >69 = C-; >66 = D; >62 = D; >59 = D-; <60 = F

I am committed to fostering an inclusive learning atmosphere and providing appropriate services and accommodations to allow access to succeed. Any students with disabilities or other special circumstances are encouraged to meet with me after class, or schedule an appointment to meet in my office (Latham 503).

If we and the rest of the backboned animals were to disappear overnight, the rest of the world would get on pretty well. But if [the invertebrates] were to disappear, the land's ecosystems would collapse. The soil would lose its fertility. Many of the plants would no longer be pollinated. Lots of animals, amphibians, reptiles, birds, mammals would have nothing to eat. And our fields and pastures would be covered with dung and carrion. These small creatures are within a few inches of our feet, wherever we go on land - but often, they're disregarded. We would do very well to remember them.

- David Attenborough
Life in the Undergrowth, BBC