

## **Biology of Lepidoptera**

**ENY 6934, section 8874 (1 credit), section 8263 (2 credit)**

**ENY 4905, section 4076 (2 credit)**

**Graduate/advanced undergraduate**

**1 or 2 credit hours, Tuesday period 5 (2 credit hrs only), 11:45-12:35, Thursday period 5-6 (1 and 2 credit hrs), 11:45-1:40, Room 1031 Entomology & Nematology Building (EYN)**

### **Instructors**

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### **Office hours**

Please make an appointment, or drop by office any time.

### **Prerequisites**

There are no prerequisites other than a basic course in biology or entomology, a serious interest in the subject and willingness to participate actively in classes.

### **Course description**

Lepidoptera are some of the best studied insects and the second largest insect order, and their taxonomic and ecological diversity, abundance, global distribution and long history of study make them model organisms in numerous fields. This course will examine how research on Lepidoptera has contributed to very broad range of disciplines, including systematics, ecology, behavior, physiology, genetics, biogeography and conservation. Each week we will have one or two seminars by instructors, guest lecturers and students, supplemented by discussions of primary scientific literature, field trips or practicals. Students will gain an appreciation of the value and diversity of research conducted on Lepidoptera, learn to critically appraise primary scientific literature and improve both their writing and presenting skills through class activities.

## **Objectives**

### *Lectures*

Introductory lectures by instructors in the first four classes will provide a broad background to some of the principal aspects of Lepidoptera biology. Additional lectures by instructors and other invited speakers throughout the semester will be given where appropriate, after the selection of student seminar topics has been made.

### *Student seminars*

All students are expected to research and present one Powerpoint seminar of c. 30 minutes in length on a topic of their choice. A selection of topics will be presented in the first class, but students are also free to suggest their own topics, with instructor approval. Student seminars will begin in week 5 (4 February). The seminar should be a general literature review of the topic, rather than a presentation of a particular paper, and students will be expected to show evidence of having read at least five articles from the primary scientific literature while preparing for the seminar. Students in the audience will also be expected to participate in class discussion following the seminar, and part of the grade will reflect this participation.

### *Research paper*

Graduate students registered for 2 credit hours (section 8263) will be required (and undergraduate students may choose) to write up the results of their literature review in the style of a scientific manuscript to be submitted to one of several target journals. The manuscript should be no more than 10,000 words in length (including references), but this should not be regarded as a target – clarity and quality are more important than quantity. The research paper must be handed in by 5pm on 9 April. Further details will be available at the first class.

### *Discussion sessions*

Presentations will be given in the Thursday class and the presenting student and/or instructors will designate 1-3 relevant papers for reading and discussion by the class the following week. These papers could offer contrasting opinions on the topic, or address a similar topic using different study groups or methods, or provide complementary information which builds on the seminar. A student will be chosen at random to lead the discussion on each paper. Students will be encouraged to read papers critically, thinking about the study group and/or region and resultant implications, considering whether the methods used are the most appropriate and adequate, asking whether the results fully support conclusions, and discussing how the study could have been improved. While prior knowledge of specific methods and systems is not expected, students should be prepared to think about broader aspects and introduce topics for discussion in class.

### *Practicals and field trips*

Potential practicals include preparation of Lepidoptera specimens for comparative morphological study and computer practicals related to biogeography and conservation planning. Possible field trips include visits to the McGuire Center for Lepidoptera, one of the world's largest Lepidoptera collections.

**Grading  
% of grade by activity**

<b>Activity</b>	<b>Graduate (1 credit) and undergraduate (option 1)</b>	<b>Graduate (2 credit) and undergraduate (option 2)</b>
Seminar	70	40
Research report	No research report	30
Class participation	20	20
Class attendance	10	10

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- E = <60%

Information on current UF grading policies for assigning grade points can be found here: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

**Assignments and attendance policy**

Attendance at class is not mandatory, but part of the grade will reflect class attendance. Attending the seminars of other students is not only courteous but also an excellent way to improve one's own seminar style and thus grades.

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

**Course outline**

The course outline presented below is subject to change. Topics are deliberately broad to permit students to design a seminar around their own interests. The leading instructor for each week is indicated by AS (Andrei Sourakov) and KW (Keith Willmott). Seminars and discussions will take place during the Thursday class (for both 1 credit and 2 credit students), while the Tuesday class will involve more practical activities to be discussed at the first class meeting.

*Introduction and background*

Week 1 (5, 7 Jan). History of research on Lepidoptera. Lepidoptera classification, relationships and origins. (KW, AS)

### *Lepidoptera biology*

- Week 2 (12, 14 Jan). Mating systems in Lepidoptera. (AS)
- Week 3 (19, 21 Jan). Predation, mimicry and chemical defense. (KW)
- Week 4 (26, 28 Jan). Lepidoptera parasitoid biology. (AS)
- Week 5 (2, 4 Feb). Lepidoptera larval hostplant relationships (KW, AS)
- Week 6 (9, 11 Feb). Larvae-ant interactions. (AS)
- Week 7 (16, 18 Feb). Metamorphosis. (AS)
- Week 8 (23, 25 Feb). Lepidoptera genetics, wing pattern evolution and development. (AS)

### *Lepidoptera communities and evolution*

- Week 9 (2, 4 Mar). Community ecology. (KW)
- Week 10 (16, 18 Mar). Historical biogeography. (KW)
- Week 11 (23, 25 Mar). Climate change. (KW)
- Week 12 (30 Mar, 1 Apr). Species richness gradients. (KW)

### *Lepidoptera conservation*

- Week 13 (6, 8 Apr). Species conservation. (AS, KW)
- Week 14 (13, 15 Apr). Lepidoptera fauna conservation (KW)
- Week 15 (20 Apr). To be decided.

**Class Demeanor Expected by Instructor:** Students should be considerate, polite, open-minded, objective and show interest in the work of others. UF rules prohibit having food or drinks in classrooms. Use of tobacco products (in any form) in the classroom is prohibited.

**Additional General Information:** The following information applies to all courses at the University of Florida.

**We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standard of honesty and integrity.**

**Academic Honesty:** As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

**Copyrighted Materials and Software Use:** All students are required and expected to obey the laws and legal agreements governing copyrighted material and software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

**Accommodations for Students with Disabilities:** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students will

provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

**University Counseling Services:** Resources are available on-campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:

1. University Counseling Center, 301 Peabody Hall, 392-1575, personal and career counseling;
2. Student Mental Health, Student Health Care Center, 392-1171, personal counseling;
3. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling; and
4. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.