Insect Diversity (BIEB 128) - Winter quarter 2022

INSECT DIVERSITY. 4 units. BIEB 128 consists of three sections. The course begins with a survey of insect diversity and arthropod systematics, and then transitions into lectures on morphology, physiology, and development. The second part of the course addresses topics that focus on different aspects of insect diversity: plant-insect interactions, parasitism, mimicry, sociality, and population dynamics. The final part of the course covers mostly applied topics: insect introductions, insect-borne diseases, pest management, and insect declines. BILD 3 is a prerequisite for this course.

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Office hours: MW, 11-12 or by appointment

• **Exams and grading**. There are two midterms, each worth 100 points, and a final exam worth 140 points. Each midterm will be based on material for that section of the course up *through* the lecture preceding the exam. The final will be cumulative but will emphasize untested material. Questions concerning exams are dealt with in office hours or discussion sections – not by email. Students requesting exam re-grades need to submit a written request specifying the questions in dispute and the reason for the re-grade. There are no make-up exams. If you miss a midterm or final exam, then you will be required to provide official documentation of an unavoidable emergency (e.g., serious illness, etc.) Without such documentation, you will receive a failing grade for that exam. For missed midterms **and** with valid documentation, the proportion of your grade that is based on your final exam will be increased to cover the midterm that was missed. For a missed final exam **and** with valid documentation, you will be expected to take an oral final or you will receive an incomplete for the course.
• **Digital insect collection.** This assignment is worth 60 points and is due the last day of the course (11 Mar). For additional information, see "BIEB128_2022DigitalInsectCollection Advice.docx" in the general information folder on Canvas.
• **Lectures.** It is your job to attend* lectures (MWF 10-1050 in Center Hall 212). Lectures are mandatory and contain important announcements. Attending lectures is key to mastering the material. Do not expect to miss lectures consistently and be able to do well. Lecture notes will be posted on Canvas at least 24 hours before each lecture but ***essential*** material will be presented in class that does not appear on web-posted notes. Please turn off cell phones before each lecture. *Once remote instruction ends.
• **Readings.** There is assigned reading from the text for many of the lectures. **The text is required** and is for sale at the UCSD bookstore. Supplementary readings (articles from the primary literature) will be placed on Canvas prior to lectures in which those readings are discussed. Supplementary readings will also be discussed in discussion section.
• **Discussion sections.** Sections are not required, but you are urged to attend to discuss lecture material, exams, supplemental reading and other topics with the IAs. Sections will not meet during the first week. See TritonLink for information regarding section times and locations.
• **Instructional assistant** office hours and contact information will be announced in lecture.
• **Cheating.** Don't. Any student caught cheating will receive an F in the course.

Lecture & date	Topic	Chapters in text*
1. M 3 Jan	Course overview & introduction to insect diversity	1
2. W 5 Jan	Systematic relationships within Arthropoda	7, 8.1
3. F 7 Jan	Insect diversity I	Taxoboxes
4. M 10 Jan	Insect diversity II	Taxoboxes
5. W 12 Jan	Insect diversity III	Taxoboxes
6. F 14 Jan	Anatomy & physiology	2, 3
7. W 19 Jan	Development	6, 8.5
8. F 21 Jan	Movement and the evolution of flight	3.1, 8.4
M 24 Jan	**Midterm 1**	
9. W 26 Jan	Plant-insect interactions I: herbivory	11
10. F 28 Jan	Plant-insect interactions II: pollination and other mutualisms	11
11. M 31 Jan	Plant-insect interactions III: contributions to insect diversity	8.6-8.7
12. W 2 Feb	Social insects I: overview and types of sociality	12
13. F 4 Feb	Social insects II: termites and Hymenoptera	12
14. M 7 Feb	Parasitic insects	13
15. W 9 Feb	Insect defense & mimicry	14
16. F 11 Feb	Population dynamics I: exponential and logistic growth	13.4
17. M 14 Feb	Population dynamics II: cycles and outbreaks	---
W 16 Feb	**Midterm 2**	---
18. F 18 Feb	Insect introductions	17.4
19. W 23 Feb	Insect-borne diseases I: types of diseases	15
20. F 25 Feb	Insect-borne diseases I: models and control	15
21. M 28 Feb	Pest management I: chemical control, IPM	16
22. W 2 Mar	Pest management II: biocontrol	16
23. F 4 Mar	Pest management III: pest management in organic agriculture	16
24. M 7 Mar	Insect declines I: pollinators	17.1-17.3
25. W 9 Mar	Insect declines II: insect apocalypse?	---
26. F 11 Mar	Entomology as a science: history, modern relevance and careers	---
F 18 Mar	**Comprehensive final exam (800-11)**	---

Text: Gullan PJ & Cranston PS (2014) *The insects: an outline of entomology*. 5th edition. Blackwell Science Ltd. Oxford, UK