BIOL 312 Entomology Syllabus – Winter 2024 – CRN 10363

General Course Information

This course will provide a detailed introduction to the field of entomology – the scientific study of insects, with an emphasis on insect evolution, ecology, and systematics. Lectures will include: an overview of insect morphology, internal anatomy, and physiology, and insect and arthropod phylogenetic relationships. Lectures will also include topics in insect ecology and evolution, including mating systems, sociality, medical entomology, plant-insect interactions, and conservation. The laboratory portion of the course concentrates on insect identification, collecting and curating techniques. As a lab project, students will prepare an image-based insect collection.

Lecture Location & Hours

Monday & Thursday, 10am – 11:20pm, MacLaurin D115

Lab Location & Hours

Monday (B01), Tuesday (B02), or Wednesday (B03), 2:30pm – 5:20pm, Cunningham 228

Course Instructors

Dr. Steve Perlman is an evolutionary biologist whose research focuses on parasites and beneficial microbes that infect insects and other invertebrates. He has been a professor at UVic since 2005. In recent years, he has also taught BIOL 355 (Evolution), BIOL 435 (Molecular Evolution), and has been the Biology Undergraduate Honours Advisor.

Dr. Neville Winchester is an entomologist whose special areas of research and interest include diversity of arthropods, ancient rainforest ecology and conservation biology. As well as doing research in temperate ecosystems, he has done high canopy work in French Guiana, Gabon, Malaysia, Thailand, Costa Rica, Panama and Ethiopia. In recent years, he has also taught BIOL 215 (Principles of Ecology), BIOL 329 (Biology of the Vertebrates of British Columbia), BIOL 330 (Study Design and Data Analysis), and BIOL 370 (Conservation Biology).

Contact Information, and Office Hour Information

Steve Perlman:
Email: stevep@uvic.ca
Office hours: Monday, 1pm – 2pm, Cunn 160F (enter through 160D)

Neville Winchester:
Email: winchest@uvic.ca
Office hours: by appointment, Cunn 232a (enter through 232)

Course Website and Materials

You can find the course website on Brightspace. Be sure to check this website regularly for important information and announcements, required readings, and other lecture and

lab material. Lecture slides will be posted on Brightspace after class. There is no required textbook for this course.

Intended Learning Outcomes

After completion of this course, you will have received an overview of the field of entomology. You will have learned what are the major groups of insects and other arthropods, how they are related to each other, and what are the main features that have shaped their evolutionary history and success. You will have learned the principles underlying phylogenetic approaches used to determine insect and arthropod relationships. You will have learned how to identify the major groups of insects and the main methods used to collect them. You will have become familiar with insect DNA and biodiversity databases. You will have learned about key issues and concepts in insect biology, including medical entomology, pest control, pollination, biodiversity conservation, and sociality. You will have gained experience reading, understanding, and synthesizing primary scientific entomological research articles and figures from these articles.

Assessments

Lecture mid-term (Thurs. Oct. 17)	15%
Lecture final (Exam period, TBA)	25%
Written assignment – paper critique (due Mon. Dec. 2)	10%
Participation exercise 1 (horizontal gene transfer, due Oct. 11)	2.5%
Participation exercise 2 (databases, diversity, DNA barcoding, due Nov. 8)	5%
Participation exercise 3 (biological control, due before class Nov. 14)	2.5%
Lab test 1 (week of Oct. 21)	15%
Lab test 2 (week of Nov. 25)	15%
Lab project (due Fri. Dec. 6)	10%

Penalty for late submissions: 5% per day.

To pass the course, students must:

1) Complete the final exam.
2) Complete the following lecture components: paper critique.
3) Complete the following lab components: a) at least 1 lab test, b) lab project.
4) Score a grade of 50 points, or greater, combined across assessments.

If either 1, 2 or 3 are not completed, the student will automatically fail the course and receive a grade of “N” on their transcript. N is a failing grade and factors into the GPA as a value of 0. If a student completes 1, 2 and 3 but is not successful in 4, they will receive an “F” on their transcript.

Appendix: Policies & Additional Information

UVic Territory Acknowledgment: *We acknowledge and respect the lək̓ʷəŋən peoples on whose traditional territory the university stands, and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day.*

Missed tests and exams:

Students who miss a test or exam are expected to contact their instructor as soon as possible. Valid excuses for missed tests include illness, emotional trauma, and UVic-sponsored sporting activities. If a student misses the lecture midterm, the marks will be distributed to the final exam. If a student misses one of two lab tests, the marks will be distributed to the other lab test. If a student misses both lab tests, they will automatically fail the course and receive a grade of "N" on their transcript. If a student misses the final exam, they are required to submit a request for academic concession, with associated documentation, as outlined in the UVic Calendar (https://www.uvic.ca/registrar/students/appeals/acad-concession/index.php).
Students are reminded that final exams in the Faculty of Science run from December 7 through December 20. Final exams will not be rescheduled for students who make travel plans that conflict with the officially scheduled final exam for this course.
Please note that no supplemental tests or exams will be offered in this course.

Important Dates:

Last day for 100% reduction of tuition fees for standard courses – Tue. Sep. 17
Last day for adding first term courses – Fri. Sep. 20
Last day for 50% reduction of tuition fees for standard courses – Tue. Oct. 8
Last day for withdrawing from first term courses without penalty of failure – Thu. Oct. 31
Reading Break – Nov. 11–13
Last day of classes – Wed. Dec. 4
Exam period – Dec. 7–20

Important UVic links:

Academic important dates: https://www.uvic.ca/calendar/dates/
Academic calendar: https://www.uvic.ca/calendar/undergrad/
Academic concession guidelines:
https://www.uvic.ca/calendar/undergrad/index.php#/policy/BymcP73U9
Academic accommodations: https://www.uvic.ca/accessible-learning/index.php
Academic integrity:
https://www.uvic.ca/calendar/undergrad/index.php#/policy/Sk_0xsM_V

Academic Integrity:

As teachers, mentors, scientists, researchers, and members of the University of Victoria community, academic integrity is of the highest importance to us. Students are required to abide by all academic regulations set out in the University calendar, including standards of academic integrity. Violations of academic integrity (e.g. cheating and plagiarism) are considered serious and may result in significant penalties.
Please read the following—you are expected to abide by the terms outlined here:
https://www.uvic.ca/services/advising/assets/docs/tri-fac-student-code-of-conduct.pdf
https://www.uvic.ca/students/academics/academic-integrity/index.php

To help avoid plagiarism and cheating, please read the UVic Libraries' plagiarism guide:
https://www.uvic.ca/library/research/citation/plagiarism/

Note that use of AI software, such as ChatGPT, is not permitted in this course, including for the paper critique or participation exercises. We reserve the right to use plagiarism detection software or other platforms to assess the integrity of student work.

Before handing in coursework for evaluation, students will be required to complete the Integrity Matters module that is available in Brightspace:
https://bright.uvic.ca/d2l/le/discovery/view/course/132610

Code of Conduct:

All staff and students are responsible for adhering to a code of conduct, including academic integrity. The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the university community have the right to this experience and the responsibility to help create such an environment.
Please be advised that, by logging into UVic's learning systems or interacting with online resources, and course-related communication platforms, you are engaging in a university activity. All interactions within this environment are subject to the university expectations and policies. Any concerns about student conduct may be reviewed and responded to in accordance with the appropriate university policy.

Copyright statement:

All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others requires the written permission of the instructor, except under fair dealing or another exception in the Copyright Act. Violations may result in disciplinary action under the Resolution of Non-Academic Misconduct Allegations policy (AC1300). Students may not distribute lecture notes or any exams or quizzes from the course without permission of the instructor, and to do so, through note-sharing sites or other means, violates the Policy on Academic Integrity.

Course Grade and Academic Transcript:

Grades for all UVic courses are submitted as percentiles. A student's academic transcript will include the percentile grade and a letter grade plus the class average and the number of students registered in the course at the time of the final exam. Percentiles will be rounded to the nearest whole number; a grade of xx.5 will be rounded up. Percentile grades will be converted to letter grades on the student's academic transcript according to the table given below.
A+ (90-100), A (85-89), A- (80-84), B+ (77-79), B (73-76), B- (70-72), C+ (65-69), C (60-64), D (50-59), F (0-49)

Tentative Lecture Schedule:

Thurs. Sept. 5	1. Introduction and Importance of Insects
Mon. Sept. 9	2. Morphology
Thurs. Sept. 12	3. Introduction to Phylogenetics
Mon. Sept. 16	4. Phylogenetics and Ecdysozoa
Thurs. Sept. 19	5. Arthropods to Hexapods
Mon. Sept. 23	6. Pterygota and flight, Neoptera
Thurs. Sept. 26	7. Neoptera continued
Mon. Sept. 30	National Day for Truth and Reconciliation – No Class
Thurs. Oct. 3	8. Holometabola, Metamorphosis & meet with a Guest Entomologist
Mon. Oct. 7	9. Holometabola continued
Thurs. Oct. 10	10. Internal Anatomy & Physiology
Mon. Oct. 14	*Thanksgiving Holiday – No Class*
Thurs. Oct. 17	**Lecture Midterm**
Mon. Oct. 21	11. Nervous System and Sensory Biology
Thurs. Oct. 24	12. Development, Life Histories
Mon. Oct. 28	13. Sexual Selection, Mating Systems
Thurs. Oct. 31	14. Plant-Insect Interactions – Herbivory
Mon. Nov. 4	15. Plant-Insect Interactions – Pollination
Thurs. Nov. 7	16. Parasitoids, Predators, Parasites
Mon. Nov. 11	*Reading Break - No Class*
Thurs. Nov. 14	17. Biological Control & meet with a Guest Entomologist
Mon. Nov. 18	18. Insect Conservation
Thurs. Nov. 21	19. Insect Symbionts
Mon. Nov. 25	20. Medical Entomology
Thurs. Nov. 28	21. Pests & transgenics
Mon. Dec. 2	22. Insect Sociality

LAB SCHEDULE

LAB#	WEEK OF	TOPIC
	Sept. 2	No labs
1	Sept. 9	Lab overview and introduction - Insects and Biodiversity – Ordinal identification
2	Sept. 16	Insect External Anatomy
3	Sept. 23	Aquatic Insect Biodiversity – sampling and curation
	Sept. 30	Truth and Reconciliation Day – NO FORMAL LABS
4	Oct. 7	Lepidoptera Biodiversity – sampling and curation
	Oct. 14	Thanksgiving – NO FORMAL LABS
5	Oct. 21	Test #1 – Identification, biodiversity modules
6	Oct. 28	Diptera Biodiversity – sampling and curation
7	Nov. 4	Coleoptera Biodiversity – sampling and curation
	Nov. 11	Reading Break – NO FORMAL LABS
8	Nov. 18	Hymenoptera Biodiversity – sampling and curation
9	Nov. 25	Test #2 – Identification, biodiversity modules