BIOLOGY 215 (10324)
PRINCIPLES OF ECOLOGY
Fall (Sept.–Dec.) 2026

COURSE OUTLINE

INSTRUCTORS:

Instructor: Dr. Debra Wertman
Office: Cunningham 224; Email: dwertman@uvic.ca
Office Hours: Thursday, 11AM–12PM (or by appointment)

Senior Lab Instructor: Dr. Lyndon Duff
Office: Cunningham 232; Email: dufflb@uvic.ca
Office Hours: By appointment

Teaching Assistants: Mackenzie Woods, M.Sc. (mbwoods@uvic.ca), Rachel Orr (rachelorr@uvic.ca), Mackenzie McNiven (mmcniven@uvic.ca), Ashely Mickens, M.Sc. (amickens@uvic.ca), and Ethel Wai (ewai@uvic.ca)

LECTURES:

Day and Time: Monday and Thursday, 8:30–9:50 AM (A01)
Building and Room: David Turpin A120
Delivery Mode: Face to Face, Powerpoint, BrightSpace

LABS:

Day and Time: See your course schedule (B01–B12)
Building and Room: Cunningham 245
Delivery Mode: Face to Face (including field trips), Powerpoint, BrightSpace

COURSE DESCRIPTION:

An introduction to factors controlling the distribution and abundance of plants and animals. Physical environments of organisms; biotic environments and interactions among species; factors influencing population growth; behavioural ecology; community ecology; succession; trophic levels and energy flow, island biogeography; biodiversity; human impact on global ecology; conservation ecology.

LEARNING OUTCOMES:

At the end of this course, you will be able to understand:
1) Basic ecological principles;
2) How these principles can be practically applied;
3) How humans have transformed the planet; and
4) Ways to fix what is broken in our ecosystems.

COURSE SCHEDULE:

WEEK	DATE	LECTURE	LAB
1 (9–11 Sept.)	Sept. 10	Introduction/Course Outline	No Labs
2 (14–18 Sept.)	14	Ecological Genetics	**1**: Ecological Sampling: Herbivory and Garry Oak Ecosystems
	17	Behavioral Ecology	
3 (21–25 Sept.)	21	Behavioral Ecology	**2**: Morphological Variation: Ecological Adaptations of *Nucella lamellosa*
	24	Population Ecology	
4 (28 Sept.–2 Oct.)	28	Population Ecology	No Labs—University closed on Sept. 30 for National Day for Truth and Reconciliation
	Oct. 1	**MIDTERM EXAM 1**	
5 (5–9 Oct.)	5	Ecological Interactions	**3**: Predator/Prey: Orb-Weaving Spiders—Quadrat Sampling, Transect Sampling
	8	Ecological Interactions	
6 (12–16 Oct.)	12	Thanksgiving (no classes)	No Labs—University closed on Oct. 12 for Thanksgiving; **LAB REPORT** due on Oct. 16
	15	Community Ecology	
7 (19–23 Oct.)	19	Community Ecology (T.E. Reimchen)	**LAB MIDTERM EXAM**—Covers material from labs **1–3**
	22	Major Ecological Communities	
8 (26–30 Oct.)	26	Major Ecological Communities	**4**: Mark and Recapture: *Hemigrapsus* sp.; and **CRITICAL EVALUATION** due in lab
	29	Global Biodiversity	
9 (2–6 Nov.)	Nov. 2	Island Biogeography	**5**: Island Biogeography: Beetles and Forest Patches
	5	**MIDTERM EXAM 2**	
10 (9–13 Nov.)	9	Reading Break (no classes)	No Labs—University closed on 9–11 Nov. for Remembrance Day and Reading Break
	12	Human Impact	
11 (16–20 Nov.)	16	Human Impact	**6**: Exploring Principles of Community Diversity: Soil Litter/Edge Part 1
	19	Human Impact	
12 (23–27 Nov.)	23	Human Impact /Conservation Ecology	**7**: Soil Litter/Edge, Diversity Indices Part 2
	26	Conservation Ecology II	
13 (30 Nov.–4 Dec.)	30	Conservation Ecology II	**LAB FINAL EXAM**—Cumulative, covers material from labs **1–7**
	Dec. 3	Conservation Ecology II	
14	7	Final Exam Review	No Labs

LECTURE CONTENT:

LECTURE TOPIC	LECTURE SUBTOPICS	EXAM COVERAGE
Ecological Genetics	Genetic variability, natural selection, evolution, geological timetable	Midterm 1
Behavioral Ecology	Optimal foraging, territoriality, sex & mating systems, group living, life histories	Midterm 1
Population Ecology	Movement, estimating population size, life tables, mortality and survivorship curves, population growth and population regulation	Midterm 1
Ecological Interactions	Competition, niche, predation, defenses	Midterm 2
Community Ecology	Succession, trophic levels, keystone species, nutrient cycling	Midterm 2
Major Ecological Communities	Estuaries, intertidal, kelp forests, pelagic, deep sea, coral reefs, lakes, tundra, taiga, temperate forests, grasslands, deserts, tropical forests	Midterm 2
Global Biodiversity	Latitude, elevation, ocean depth; causes: evapotranspiration, spatial heterogeneity, geological history, complexity, stability	Midterm 2, Final Exam
Island Biogeography	Island size, distance, species turnover, equilibrium & tripartite theory	Midterm 2, Final Exam
Human Impact	Human impact on ecosystems – population growth, habitat loss, fragmentation, atmospheric pollutants, climate change, marine and freshwater pollution, overhunting, overfishing, introduced species, extinctions	Final Exam
Conservation Ecology	History of conservation, ecological footprint, IUCN categories, protected areas, SLOSS, minimum viable population (MVP), minimum viable area (MVA), critical habitats, endemic species, park design, restoration, de-extinction, re-wilding, role models	Final Exam*

*The Final Exam will also incorporate general ecological principles from the entire course.

RECOMMENDED TEXTBOOK AND REFERENCES:

Textbook: *Ecology: Concepts and Applications* by Anna A. Sher, Manuel C. Molles Jr. (2026 Release ISE)

- Cost and Availability: Paperback = ~$130, 180-day e-book = ~$70 (UVic Bookstore)
- Purchase suggested but not required
- Any used edition of this or other Ecology texts will suffice

Additional readings to supplement lecture topics:

- Peer-reviewed scientific journals (e.g., Science, Nature, Conservation Biology, Ecology, Trends in Ecology and Evolution) available through your UVic Library Login*

*Science students are encouraged to devote a short period (e.g. 30 minutes) each week to browse scientific journals for general content.

- Other learning tools and resources: New Scientist magazine, Google Scholar, Web of Science, Google, YouTube, Chat GPT etc. (with caution)
- Interesting Documentaries: David Attenborough, Planet Earth I & II, Blue Planet I & II, etc.

Electronic Lab Manuals and accompanying material will be published on BrightSpace in advance of your labs, usually on the preceding Friday.

EVALUATION:

Required Course Components:

- Lecture Midterm Exams
  - Multiple Choice format, up to 30 questions each
  - In-person/on paper, closed book (bring a non-programmable calculator)
  - In-class (Midterm 1 on 1 Oct., Midterm 2 on 5 Nov.): These exams have been benchmarked to take 30 minutes to complete, however, all students will equally receive 80 minutes to complete the exam as an implementation of universal extended time. This is intended to meaningfully address accommodated extra time for students with accommodation that would otherwise write with up to 80 minutes based upon a 30-minute exam.
- Lecture Final Exam
  - Multiple Choice format, ~100 questions
  - In-person/on paper, closed book
  - During final exam period (3h)
- Lab Report / Critical Evaluation
  - Details to be provided in your lab section
  - Due 16 Oct. (Lab Report) and in-lab 26–30 Oct. (Critical Evaluation)
- Lab Midterm Exam
  - Multiple Choice and Short-answer format, 20–30 questions
  - In-person/on paper, closed book
  - In-lab (week of 19–23 Oct.)
- Lab Final Exam
  - Multiple Choice, Short- and Long-answer format, 20–30 questions
  - In-person/on paper, closed book (bring a non-programmable calculator)
  - In-lab (week of 30 Nov.–4 Dec.)

Mark Distribution:

Component	**% of Final Grade**
Lecture Midterm 1	12.5
Lecture Midterm 2	12.5
Lecture Final Exam	35.0
Lecture Total	**60.0**
Lab Report / Critical Evaluation	10.0
Lab Midterm Exam	15.0
Lab Final Exam	15.0
Lab Total	**40.0**

Important Evaluation Details:

In any science course which includes laboratory work, students will be required to achieve satisfactory standing in both the laboratory and lecture components of the course as outlined in the Academic Calendar (UVic policy).

Exam attendance is required and verified by review of student ID (please bring your student card to each exam). Academic concessions (such as deferred exams) will only be offered to students who miss exams for medical or other legitimate reasons (e.g., bereavement). Students must write each exam; note that deferred midterms and final exams may be provided in a different format than the corresponding initial exam. The UVic Department of Biology does not offer supplemental final exams.

The two lecture midterm exams, the lecture final exam, and the laboratory component (attendance to 5/7 labs), lab report/critical evaluation, lab midterm exam, and lab final exam) must be completed to receive a grade other than "N". Failure to complete one or more of these elements will result in a grade of "N" regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student's GPA as 0. The maximum percentage that can accompany an N on a student's transcript is 49.

UVic Grading Scheme: A+ (90–100%), A (85–89.5%), A- (80–84.5%), B+ (77–79.5%), B (73–76.5%), B- (70–72.5%), C+ (65–69.5%), C (60–64.5%), D (50–59.5%), F (< 50%, after final exam).

COURSE EXPECTATIONS AND PROTOCOLS:

- Lecture attendance is expected. Exams may cover material presented in class and not directly embedded in the Powerpoint slides.
- Lectures will not be live streamed but will be recorded by the instructor. Lecture recordings will be released to the class via Brightspace at the discretion of the instructor. If you must miss a lecture due to illness or another legitimate time conflict, arrange to acquire lecture notes from a helpful classmate and/or inform the instructor.
- Pdfs of all Powerpoint slides shown in lecture will be posted on BrightSpace on the lecture date following class.
- Lab attendance (80%, 6/7 labs) is required. Students may only miss one lab without concession. It is important to attend your assigned lab section. Late lab reports/critical evaluations will not be accepted without valid concession.
- All correspondence regarding missed exams and lab reports/critical evaluations MUST be received by the instructors via email.
- Access to the Biology 215 BrightSpace page is restricted to registered students with UVic NetLink IDs. Lecture pdfs and videos limited to personal use and not for redistribution.
- If you are registered with the UVic Centre for Accessible Learning (CAL) and have academic accommodations, please release your letter to your instructors as soon as possible (i.e., at the beginning of the semester).

Email policy:

- Do not wait until the last minute to email instructors or TAs with questions about assessments (exams and assignments). You should expect to receive instructor and TA email responses within 48h—if you have not received a response after 48h, please send a follow-up email.

- If your question relates to the lecture material or attendance, email Dr. Wertman. If your question relates to lab content or attendance, email Dr. Duff AND your lab section TA.
- It is strongly recommended to email instructors from your UVic email address to ensure that your messages are not marked as junk mail.

Illness:

- Do NOT come to lecture or lab if you are sick. If you require a concession for an exam or assignment this reason you must email (see **email policy** above) your instructor(s) as soon as possible.

Generative AI policy:

- In this course, you are limitedly authorized to make the use of generative AI such as ChatGPT. You may ONLY work with generative AI for your Lab Report (details to be provided in your lab section). To not violate academic integrity, you must properly cite ChatGPT or any other tool at the end of your Lab Report. Additionally, you must include all the prompts and questions used within the generative AI to create content as an appendix to your Lab Report. For all the other activities in this course, please refrain from using any generative AI. Please note that you can opt for not using generative AI at all to successfully complete all the courses requirements.
- Although the course allows the use of generative AI to complete the Lab Report, please be aware of the following flaws when using these tools:
    - Generative AI does not fact check
    - Generative AI may provide biased and inaccurate answers
    - Generative AI hallucinates and may provide false or/and made-up information
    - Generative AI does not critically analyze content
    - It is your responsibility to fact check, remove bias and inaccuracies, and critically analyze any AI generated content.

ADDITIONAL MATERIAL:

***UVic is committed to promoting, providing and protecting a supportive and safe learning and working environment for all its members*.**

Territorial Acknowledgement

We acknowledge and respect the lək̓ʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

Attendance and absences

*Medical documentation for short-term absences is **not required**. **Attendance is important**. Students who can not attend due to illness are asked to notify their instructors immediately. If illness, accident, or family affliction causes a student to miss the final exam or to fail to complete any assignment by the end of the term students are required to submit a request for academic concession.*

- *Policies regarding undergraduate student academic concessions and deferrals are also detailed on the **Undergraduate Records**. Students must submit a submit a **Request for Academic Concession.***

Academic Integrity

*Students are required to abide by all academic regulations set as 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. See the **UVic Policy on Academic Integrity** for details.*

Copyright

*All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class**[1]**. 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).***

Student conduct

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. The University will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment.

Please be advised that this includes 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.

To report concerns about online student conduct: onlineconduct@uvic.ca

Concerns about conduct in lectures and labs should be brought to your instructor.

Mental Health

A note to remind you to take care of yourself. Diminished mental health can interfere with optimal academic performance. Do your best to engage in self-care and maintain a healthy lifestyle this semester. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone. Support services at UVic can be found through The UVic Student Wellness Centre which provides cost-free and confidential mental health services to help you manage personal challenges that impact your emotional or academic well-being.