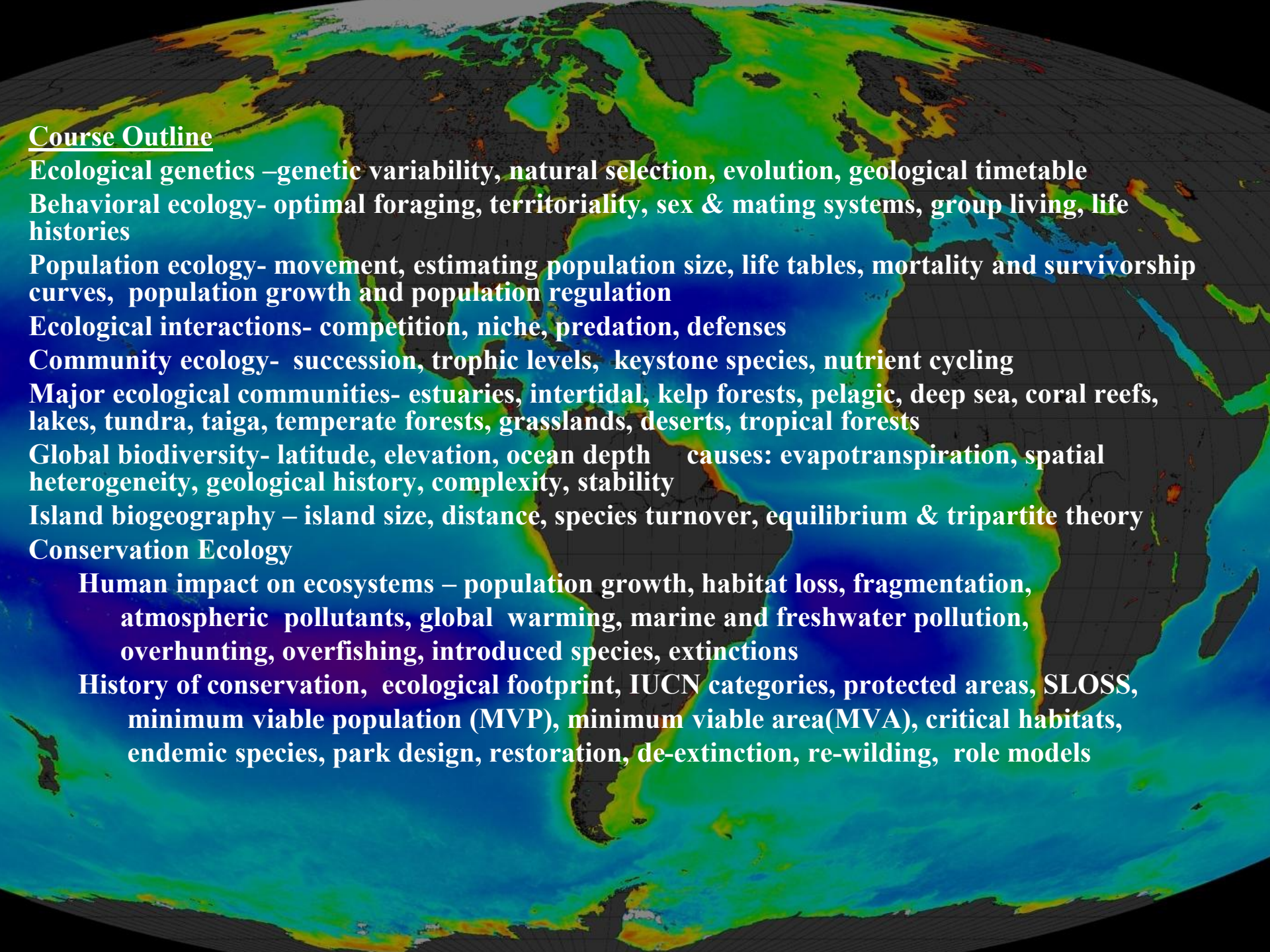
• BIOLOGY 215 (10324)
• PRINCIPLES OF ECOLOGY
• Sept 2025

- Instructor: Dr. T. E. Reimchen
- Office: Cunn. 224, reimchen@uvic.ca
- Senior Lab Instructor: Dr. Lyndon Duff
- Office: Cunn. 232, dufflb@uvic.ca
- Lectures MR: 0830-0950, David Turpin 120
- Delivery: Face to Face, PowerPt and BrightSpaces

- **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.**

- **Lecture outcomes: Students are expected to understand basic ecological principles, their application, how humans have transformed the planet and how to fix what is broken.**



Course Outline

Ecological genetics –genetic variability, natural selection, evolution, geological timetable

Behavioral ecology- optimal foraging, territoriality, sex & mating systems, group living, life histories

Population ecology- movement, estimating population size, life tables, mortality and survivorship curves, population growth and population regulation

Ecological interactions- competition, niche, predation, defenses

Community ecology- succession, trophic levels, keystone species, nutrient cycling

Major ecological communities- estuaries, intertidal, kelp forests, pelagic, deep sea, coral reefs, lakes, tundra, taiga, temperate forests, grasslands, deserts, tropical forests

Global biodiversity- latitude, elevation, ocean depth causes: evapotranspiration, spatial heterogeneity, geological history, complexity, stability

Island biogeography – island size, distance, species turnover, equilibrium & tripartite theory

Conservation Ecology

Human impact on ecosystems – population growth, habitat loss, fragmentation, atmospheric pollutants, global warming, marine and freshwater pollution, overhunting, overfishing, introduced species, extinctions

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

- **Lecture Text: Ecology- Concepts and Application Authors: Molles and Laursen**
- **-E-version available from bookstore (cost ~$64)**
- **-purchase suggested but not required**
- **-any used edition of this or other Ecology texts will suffice**

Additional readings to supplement lecture topics: examples- Science, Nature, New Scientist, Conservation Biology, Ecology, Trends in Ecology and Evolution, Web of Science, Google Scholar, Google, Chat GPT (with caution)

Interesting Documentaries – David Attenborough, Planet Earth I&II, Blue Planet I&II, etc …….

There will be 3-5 minute break halfway through most lectures devoted to questions and answers concerning any issues from the previous or current lecture. Attendance to lectures is expected (a marking sheet will be circulated occasionally).
A pdf of all Powerpoint slides shown in lecture will be posted on BrightSpaces later in the day. Lectures will not be live-streamed but most will be recorded and posted on BrightSpaces later in the day.

- **-access to 215 website restricted to registered students with a UVic email account.**
- **-lecture pdfs and videos limited to personal use and not for redistribution**
- **Electronic Lab Manual/Modules- available on Biol 215 BrightSpaces**

Each of these periodicals are published weekly and are online from UVic library

Science students are encouraged to devote a short period (e.g. 30 minutes) each week to browse these weekly periodicals for general content

Course marking scheme

Lecture mid-term examinations – multiple choice questions (30 minutes during lecture)

Oct 6 (12.5% of course grade)

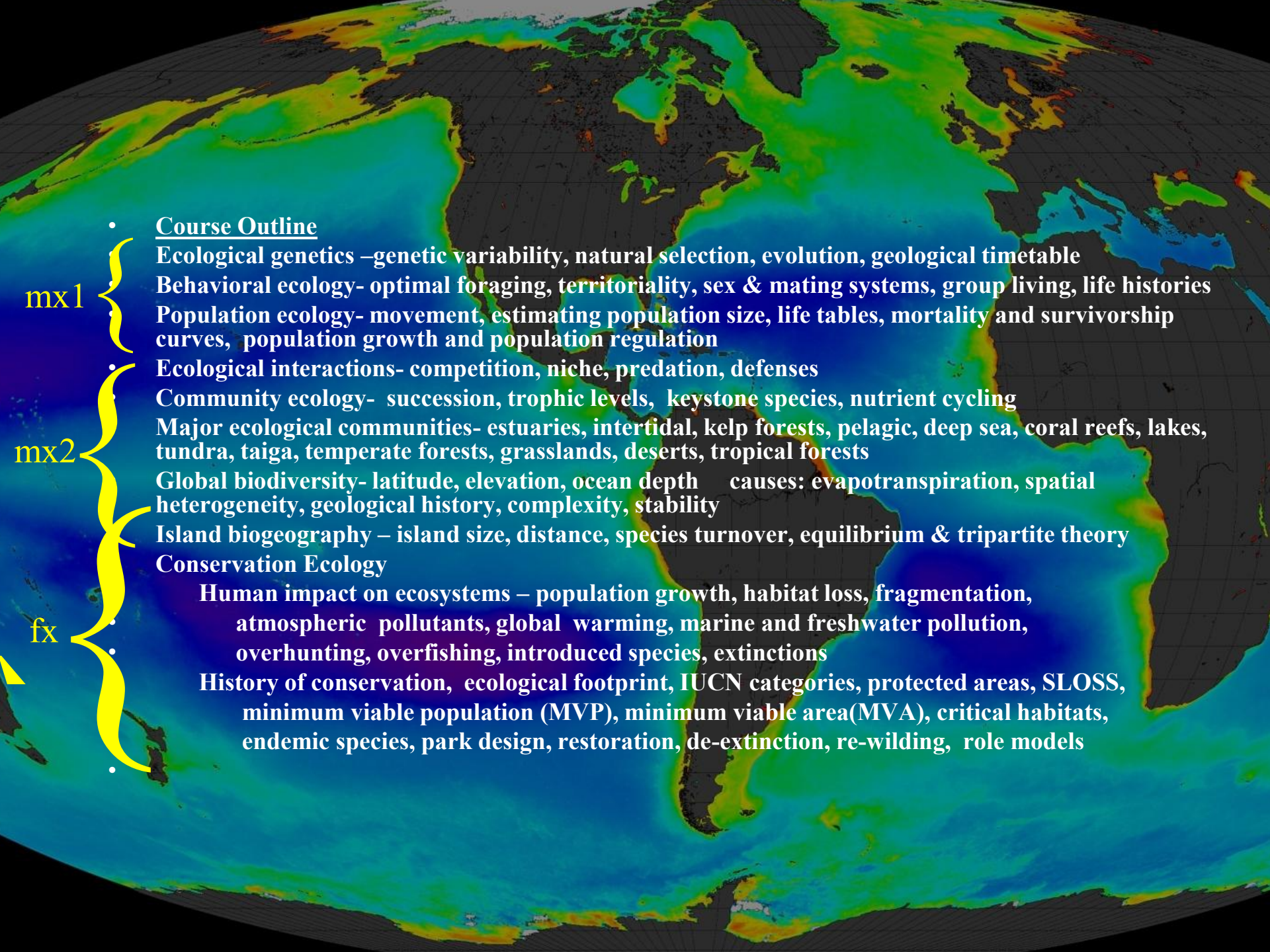
Nov 3 (12.5% of course grade)

Final Lecture examination (3 hours, 35% of course grade) …includes all lectures following second midterm as well as general ecological principles from the entire course.

Deferred exams will be offered only for medical issues or for previously approved deferrals. Students receiving less than 45% on the final lecture exam receive a failing grade for the course. The Biology Dept does not offer supplemental final exams.

The two midterm exams, the final exam and the laboratory component 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.

"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)



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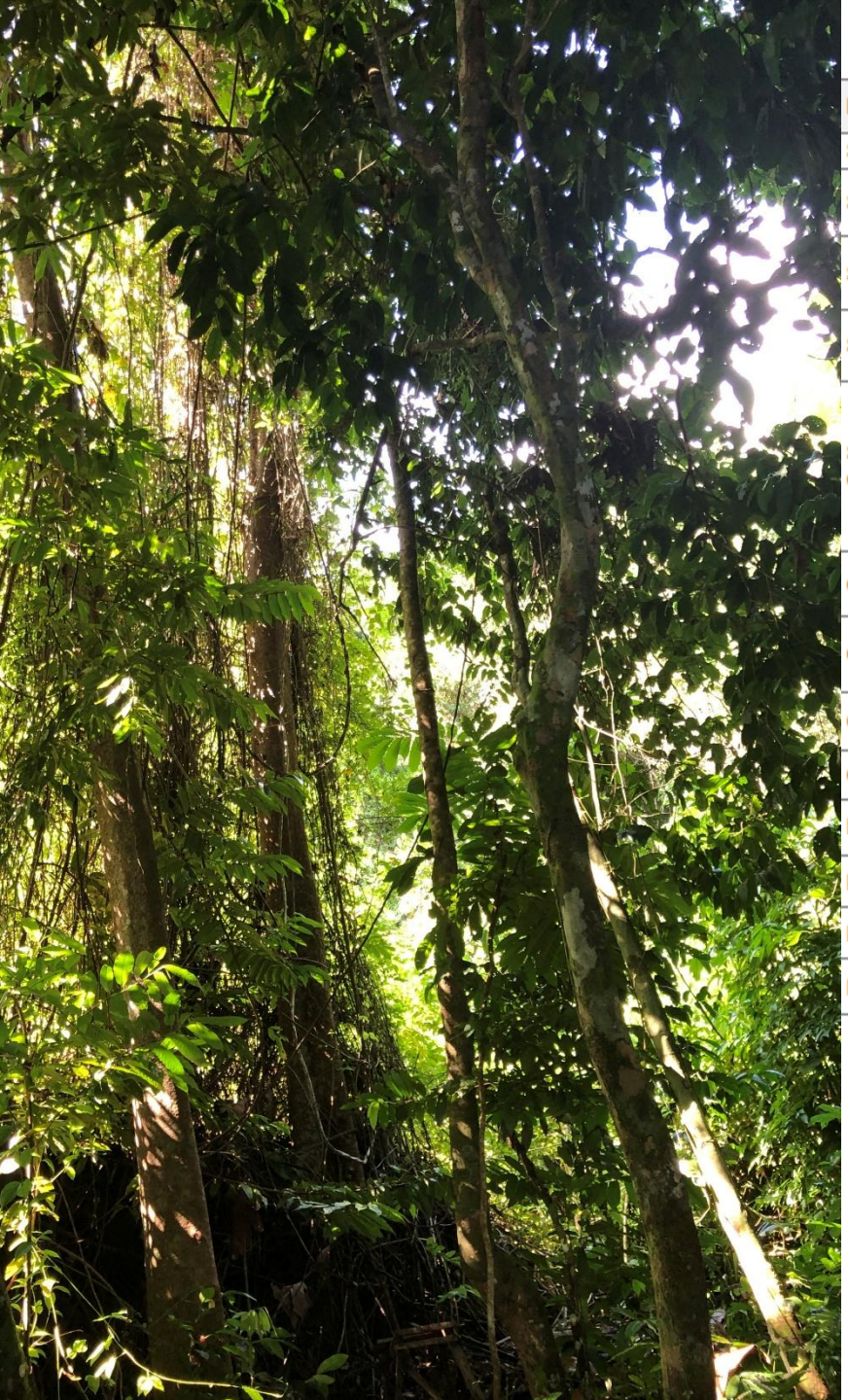

BIOLOGY 215 LAB SCHEDULE – FALL 2025

DATE (WEEK OF)	LAB #	LAB CONTENT
September 1-5		**No labs**
September 8-12	1	Ecological Sampling: Herbivory and Garry Oak Ecosystems
September 15-19	2	Morphological Variation: Ecological Adaptations of *Nucella lamellosa*
September 22-26	3	Predator/Prey: Orb-Weaving Spiders Quadrat Sampling, Transect Sampling
September 29 – October 3	4	**Online lab** – Modeling Suitable Habitat for a Species of Conservation Concern: An Introduction to Spatial Analysis with QGIS (self-directed lab exercise) **No in-person labs** – University closed on Tuesday September 30 for National Day for Truth and Reconciliation
October 6-10		**LAB MIDTERM EXAM** Covers material from labs 1 – 4
October 13-17		**No in-person labs** – University closed on Monday October 13 for Thanksgiving
October 20-24	5	Mark and Recapture: *Hemigrapsus* sp.
October 27-31	6	Island Biogeography: Beetles and Forest Patches
November 3-7	7	Exploring Principles of Community Diversity: Soil Litter/Edge Part 1
November 10-14		**No labs** – University closed November 11-13 for Remembrance and Reading Break
November 17-21	8	Soil Litter/Edge, Diversity Indices Part 2
November 24-28		**LAB FINAL EXAM** This exam is cumulative.

LABORATORY MARK DISTRIBUTION (40% of the course mark)

Assessment	Value
Lab midterm exam	15%
Lab final exam	18%
Lab assignment (from lab 4)	7%
Total laboratory mark	**40% of course grade**

Note: Details of the laboratory exams and lab assignment will be covered by your TA in the lab.
The laboratory final exam is cumulative.

Important Dates

Sept 03: First day of classes(Sept 04 for B215)

Sept 16: last day for 100% reduction of tuition fees for standard first term and full year courses. 50% of tuition fees will be assessed for courses dropped after this date

Sept 19: Last day for adding courses that begin in the first term

Sept 30: Last day for paying first term fees without penalty
University closed (National Day for Truth and Reconciliation)

Oct 06: First lecture mid-term exam (30 minutes during lecture period)

Oct 07: Last day for 50% reduction of tuition fees. 100% of tuition fees will be assessed for courses dropped after this date

Oct 14: University closed (Thanksgiving Day

Oct 31: Last day for withdrawing from first term courses without penalty of failure

Nov 03: Second mid-term exam (35 minutes during lecture period)

Nov 10-12: Reading Break

Nov 11: University Closed (Remembrance Day)

Dec 03: Last day of classes

Dec 06: Examinations begin for all faculties

Dec 20: Examinations end for all faculties

We acknowledge and respect the Lək̓ʷəŋən (Songhees and Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.

Learn lots, study and enjoy the course