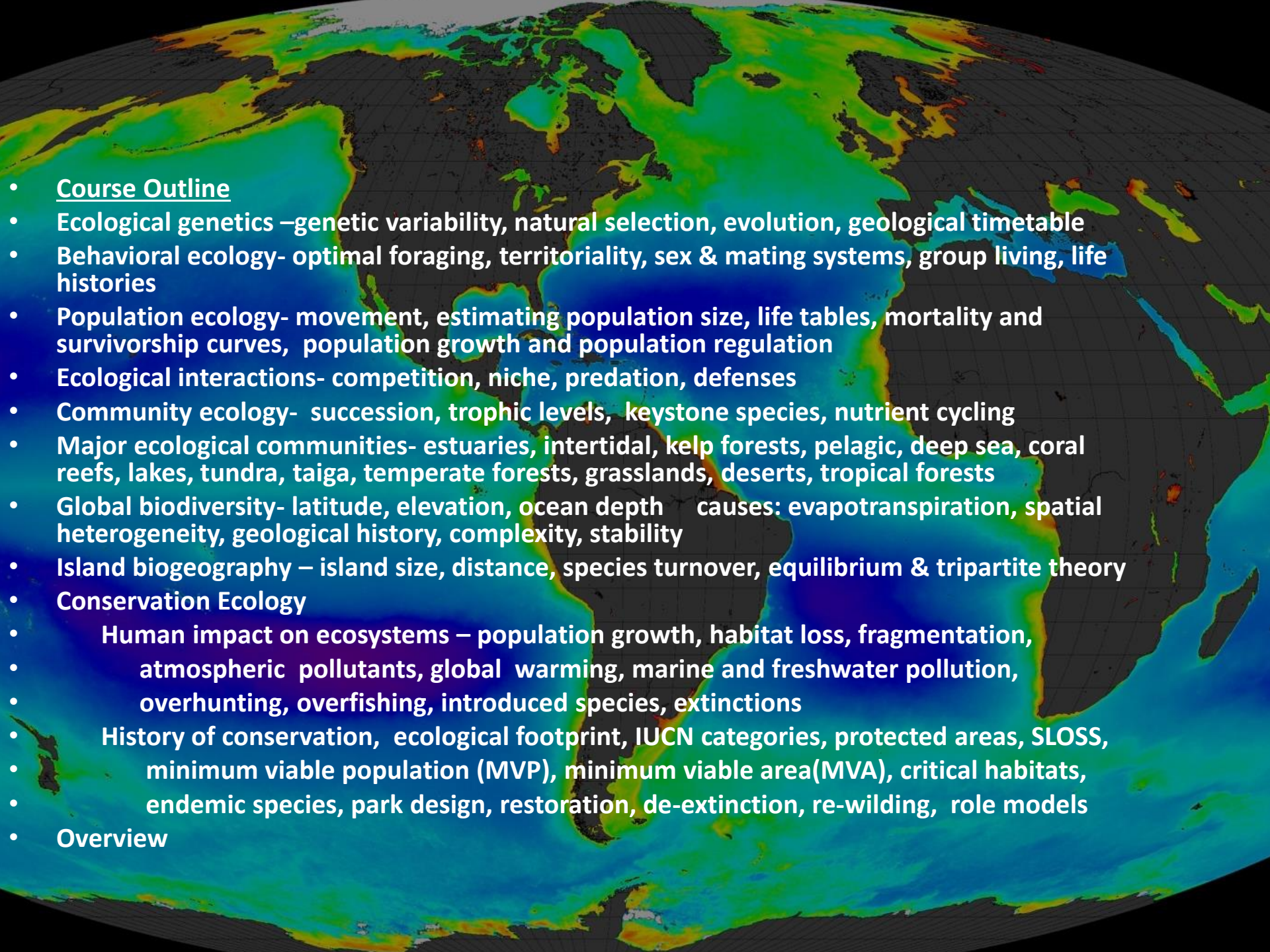




- **PRINCIPLES OF ECOLOGY**
- **BIOLOGY 215 (10351)**
 - **Sept 2023**
 - **Instructor: Dr. T. E. Reimchen**
 - **reimchen@uvic.ca**
 - **Senior Lab Instructor: Alicia Rippington**
 - **aliciad@uvic.ca**
 - **Lectures MR: 0830-0950**

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Anders, Apollo 8, 1968



- 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
- Overview

- **Lecture Text: -purchase suggested but not required**
- **Ecology Authors: Molles and Laursen 2020- 5th edition (Canadian Edition)**
- **-E-version available from bookstore (cost ~\$62)**

Additional readings to supplement lecture topics: examples- New Scientist, Conservation Biology, Ecology, Trends in Ecology and Evolution, Web of Science, Google Scholar, Google, Wikipedia

- **-pdfs covering most lecture content and lecture video will be posted on BrightSpaces website in the late afternoon on each lecture day**
- **-lecture pdfs limited to personal use and not for redistribution**
- **-access to 215 website restricted to registered students with a UVic email account.**
- **Electronic Lab Manual/Modules- available on Biol 215 BrightSpaces**

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

215 Lab Schedule

DATE (WEEK OF)	LAB #	LAB CONTENT
September 4-8		No labs
September 11-15	1	Ecological Sampling: Herbivory and Garry Oak Ecosystems
September 18-22	2	Morphological Variation: Ecological Adaptations of <i>Nucella lamellosa</i>
September 25-29	3	Predator/Prey: Orb-Weaving Spiders Quadrat Sampling, Transect Sampling
October 2-6	4	Modeling Suitable Habitat for a Species of Conservation Concern: An Introduction to Spatial Analysis with QGIS (self-directed lab) No in-person labs – National Day for Truth and Reconciliation
October 9-13		Modeling Suitable Habitat for a Species of Conservation Concern: An Introduction to Spatial Analysis with QGIS (self-directed lab) No in-person labs – Thanksgiving
October 16-20		LAB MIDTERM EXAM Covers material from labs 1 – 4
October 23-27	5	Mark and Recapture: <i>Hemigrapsus</i> sp.
October 30 – November 3	6	Island Biogeography: Beetles and Forest Patches
November 6-10	7	Exploring Principles of Community Diversity: Soil Litter/Edge Part 1
November 13-17		No labs – University closed November 13-15 for Reading Break
November 20-24	8	Soil Litter/Edge, Diversity Indices Part 2
November 27 – December 1		LAB FINAL EXAM This exam is cumulative.

- All lectures and labs are in person
- Course marking scheme
- Lecture mid-term examinations – during class time
- Oct 16- 0830 hrs (multiple choice questions on previous lectures)
- -25% of course mark
- Final Lecture examination (35% of course mk) ...All lectures not covered in the midterm exam as well as general ecological principles from the entire course.
- Date and time TBA

Laboratory mark distribution

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

Important Dates and Issues

Sept 06: First day of classes

Sept 19: 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 22: Last day for adding courses that begin in the first term

Sept 30: Last day for paying first term fees without penalty

Oct 10: Last day for 50% reduction of tuition fees. 100% of tuition fees will be assessed for courses dropped after this date

Oct 16: Lecture midterm exam

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

Nov 13-15 Reading break

Dec 04: Last lecture

Dec 07: Examinations begin for all faculties

There will be 5 minute break half way through each lecture devoted to a question and answer session concerning any issues from the previous or current lecture.

Pdfs of most lecture material will be posted on Brightspaces later in the day.

Students are responsible for checking their own records and registration status and should review the UVic Student Code of Conduct.

Deferred exams will be offered only for medical issues. Students receiving less than 45% on the final lecture exam receive a failing grade for the course and a supplementary exam is not permitted for those who get less than 50% in the course.

Learn lots, study and enjoy the course

Evolutionary and Ecological Studies in Reimchen's Lab



Dr. T. E. Reimchen
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University of Victoria
Victoria, British
Columbia, V8W 3N5,
Canada
reimchen@uvic.ca

1: Brief canoe sequence of Drizzle Lake [\(video\)](#)

2: Underwater video of nesting male stickleback and curious Common Loons in dystrophic (red-shifted) waters [\(video\)](#). see [Reimchen 1989](#) and [Marques et al. 2017](#).



Lab Members



Adaptive Radiation &
Functional Morphology



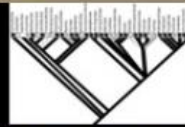
Haida Gwaii
Lake Biophysicals



Loon Research



Salmon Forest
Project



Molecular Studies



Publications



Diving photos

Supporting Agencies