BIOLOGY 150A – Modern Biology

Fall 2025

Department of Biology, University of Victoria

A. Basic Course Information

Course Description
An introduction to biological science, discussing the diversity of organisms and the evolutionary and ecological principles underlying this diversity. Topics include the history of life, genetics, mechanisms of evolution, biological diversity, and the ecology of communities and ecosystems.

Meetings
A01 (CRN 10279) – Tuesday, Wednesday and Friday, 9:30 – 10:20 AM, MacLaurin A144 (David Lam Auditorium)
A02 (CRN 10280) – Tuesday, Wednesday and Friday, 1:30 – 2:20 PM, Engineering and Computer Science 123

Instructors
Dr. Greg Beaulieu (September; introduction and inheritance)
Office: 006 Petch
Email: gregoryb@uvic.ca. If you send an email, please put "Biology 150A" in the message line.
Phone: 721-7140
Office hours: by appointment
Dr. Beaulieu is also the course coordinator. You should communicate with him on matters of course business. If your question concerns specific course material, you should direct it to the relevant instructor.

Dr. David Punzalan (he/him) (September – October; evolution and biological diversity)
Office: 007 Petch
Email: davidpunzalan@uvic.ca. If you send an email, please put "Biology 150A" in the message line.
Phone: 721-7109
Office hours: by appointment

Dr. Gerry Gourlay (she/her) (late October – December; plant biodiversity and ecology)
Office: Petch 041g (only in late October – early December on class days)
E-mail: holmgera@uvic.ca. If you send an email, please put "Biology 150A" in the message line.
Office Hours: by appointment

Prerequisites
None.

Course Website
Biology 150A has a Brightspace site. There you will find lecture notes, marks, links, items of business etc. Each instructor will use the site in their own way.

Please be aware that lecture notes are for personal use only and must not be published, distributed, sold or posted anywhere else.

Textbook
Concepts of Biology, by Samantha Fowler, Rebecca Roush and James Wise (senior contributing authors), OpenStax. This is a free online textbook. You can find it here.

Learning Outcomes
In this course you will learn about basic biology, of course, but we hope the course also helps you to develop good work and study habits that serve you throughout your university career.

In terms of the course material, you will …
- understand the basics of heredity and evolution, and how they interrelate.
- identify unique aspects of invertebrates and vertebrates as it relates to evolution and diversity.
- describe the importance of ecology from an environmental and evolutionary perspective including behavioural, community, ecosystem, and population ecologies.
- relate community attributes in a population to both ecology and conservation.

In terms of your development as a student, you will actively work towards …
- developing time management skills
- asking strong questions and finding out answers
- relating lecture and text material
- recording useful notes in class that address key concepts but are not a direct transcription of what is said
- coping with the pressures of university and finding solutions through on- and off-campus resources

A few tips
- You should make a friend in class so that you can get notes from them if you miss a class for an unavoidable reason.
- Regular exercise helps with all aspects of your life: physical health, emotional equilibrium, intellectual functioning.
- Take advantage of our availability outside of class time. We are here to help! We look forward to connecting with students and answering your questions.

B. Evaluation

Components of your course grade

Midterm exam 1 (Wednesday, October 8)	30%
Midterm exam 2 (Friday, November 7)	30%
Final exam (December final exam period; cumulative)	40%
	100%

This course has two essential components: writing at least one of the midterms, and writing the final exam. If you do not do both, either at the regular time or deferred, you will receive a grade of N.

Midterm exams
Format: approximately 30-35 multiple choice questions, 45 minutes; in class, during the regular lecture period.

Final exam
Format: approximately 70-75 multiple choice questions. The exam will test all the material in the course, but the emphasis will be on Gerry's topics which will not have been tested on the midterms.

The final exam will be written during the final exam period (Saturday, December 6 – Saturday, December 20). The specific day and time for Biology 150A will be arranged by the Registrar's office and announced in October.

Because the final exam period ends for all faculties on Saturday, December 20, the university's last exam will be in the evening of that day. Your last exam might be on this date, or it might be earlier – you will know for sure only when the final exam schedule is drawn up and posted in October.

Travel plans are not a valid reason for missing a midterm or the final exam. Please do not make plans to leave Victoria in December without being sure that your final exams in all your courses will be over.

Exam Policy
No electronic devices will be permitted during the midterms or final exam.

If you must miss a midterm for a valid reason (illness, accident, personal or family affliction, participation in an important cultural, community or sporting event)., your course mark will be calculated based on the other components of the course (40% the midterm you wrote, 60% final exam), and you will not incur any penalty. If you miss both midterms, you will be given a deferred midterm in January (counting for 40% of your course grade).

If you miss only one midterm, you will not be eligible to write it as a deferred midterm in January. You can write a deferred midterm only if you missed both midterms.

If you expect to miss a midterm for any of the above reasons, please notify the course coordinator, Dr. Beaulieu, by email as soon as possible (gregoryb@uvic.ca). You will not need supporting documentation if you miss the midterm for a medical reason, but you will need to show documentation for any other reason.

See the next section for the time and place of the deferred midterm writing.

Deferred final exam
The final exam can be missed and deferred for the same reasons listed above for missing a midterm (illness, accident, personal or family affliction, participation in an important cultural, community or sporting event).

- If you expect to miss the final exam for any of the above reasons, please notify the course coordinator, Dr. Beaulieu, by email as soon as possible (gregoryb@uvic.ca). You will not need supporting documentation if you miss the midterm for a medical reason, but you will need to show documentation for any other reason.

- *Holiday travel plans are not an acceptable reason to miss the final exam.*

- To make your deferred status official in the eyes of the university, you must fill out a Request for Deferral form. Note that you should send it to studentsupport@uvic.ca, not to the course coordinator.

- Here is more general information about the types of concessions and accommodations available to UVic students. It might come in handy in other courses you take.

- A writing of the deferred midterm and deferred final exam will be offered to you on Saturday, January 10, 2026, at 10:00 AM, in Engineering and Computer Science 124. This constitutes your official notification of the deferred exam time and place. If you are not able to make this writing, please contact the course coordinator, Dr. Beaulieu, by email as soon as possible (gregoryb@uvic.ca).

Grading Policy
At the University of Victoria, grades are submitted by instructors as percentages. These will be converted to letter grades by the Registrar, according to this grading scale:

A+	90 – 100%	B+	77 – 79%	C+	65 – 69%
A	85 – 89%	B	73 – 76	C	60 – 64%
A-	80 – 84%	B-	70 – 72%	D	50 – 59%

The only circumstances under which we change a submitted course grade are as follows: a) if we have made a calculation error in determining your grade; b) if you have deferred a midterm or the final exam, received an N, and then written a deferred exam.

Please do not ask us to raise your percent grade to qualify you for a higher letter grade. We turn down all such requests.

You will receive an F in the course if your aggregate grade is less than 50% (rounded to the nearest whole number). It is not necessary to pass the individual course components – the midterms or the final exam – in order to pass the course.

You will receive an N in the course if you miss both midterms or the final exam. If you write a deferred exam, your course grade will be updated on your transcript to include your deferred exam score.

No supplemental final exam (second-chance final exam) will be given in this course, although, as described above, you may defer the final exam for any of the reasons given.

Research project: exam timing and grade outcomes
The organizers of Biology 150A have agreed to participate in a research project.

Exam completion times and grading outcomes of this course are the subject of a study being conducted by Dr. Mark Laidlaw and Dr. Travis Martin of the Department of Physics. The purpose of this research is to characterize student exam submission behaviours, and examine how they correlate with student performance. One of the factors that will be tested includes the maximum duration assigned, which may imply status as a student with extended time accommodations. The anticipated benefit of this is to provide guidance data for academic administrators in determining policies on universal design.*

The data on completion times and durations will be kept separate from performance data until after the course has ended and final grades have been submitted. Furthermore, the analysis of the exam completion times and grades for students in this course will be performed using anonymized data, free of student names and student ID numbers, after the completion of the course and submission of final grades. The use of the data, and any collected timing data, will not affect your grade in any way.

Students may opt out of having their data analyzed for this study by sending an email to Dr. Mark Laidlaw or Dr. Travis Martin. Opting out of the analysis will in no way affect performance in the course.

If you have any questions about how your data will be used, or details about the study, you may contact the Data Steward, Dr. Doug Briant, (biochair@uvic.ca), or you may contact the researchers, Dr. Travis Martin (travismartin@uvic.ca) and Dr. Mark Laidlaw (laidlaw@uvic.ca). You may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca).

*Note: Universal Design is a modern pedagogical approach to address accessibility in courses. The approach argues that courses should be designed such that the environment and course policies should be equally usable by all people, regardless of ability or disability, as much as possible. There are many approaches for implementing Universal Design in courses, and these methods vary across disciplines.

C. Important Dates for Biology 150A

On the UVic website you will find a fuller list of important UVic academic dates, but the ones listed below are the ones that will matter to students in this course and to students wishing to add the course. Items in **bold** are worth points in the course.

Wednesday, September 3	First day of classes for first term; first day of class for Biology 150A
Tuesday, September 16	Last day for 100% reduction in fees for standard courses
Friday, September 19	Last day for adding courses that begin in the first term
Tuesday, September 30	Last day for paying first term fees without penalty
Tuesday, September 30	National Day for Truth and Reconciliation; UVic closed
Tuesday, October 7	Last day for 50% reduction of tuition fees for standard courses
Wednesday, October 8	**Midterm Exam 1; in class**
Friday, October 31	Last day for withdrawing from first term courses without penalty of failure
Friday, November 7	**Midterm Exam 2; in class**
Tuesday, November 11	UVic closed (Remembrance Day); no classes
Monday, November 10 – Wednesday, November 12	Reading Break; no classes
Wednesday, December 3	Last day of class for first term courses; last day of class for Biology 150A
Saturday, December 6	**First day of final examinations period**
Saturday, December 20	**Last day of final examinations period**
Saturday, January 10	**Deferred midterm and final exam**

D. Lecture Schedule (tentative)

Greg's Topics and Readings (September 5 – 19)

Topic 1 – Life and the study of life
Chapter 1 – Introduction to Biology
- Section 1.1, Themes and Concepts in Biology

Topic 2 – Inheritance 1: Mitosis, meiosis and sexual life cycles
Chapter 6 – Reproduction at the Cellular Level
- Section 6.1, The genome
- Section 6.2, The cell cycle

Chapter 7 – The Cellular Basis of Inheritance
- Section 7.1, Sexual reproduction
- Section 7.2, Meiosis

Topic 3 – Inheritance 2: Genetics
Chapter 8 – Patterns of Inheritance
- Section 8.1 – The study of genetics has ancient roots
- Section 8.2 – The science of genetics began in an abbey garden
- Section 8.3 – Mendel's law of segregation describes the inheritance of a single character

Dave's Topics and Readings (September 23 – October 24)

Topic 1 – Evolution 1: Definitions and Misconceptions
Chapter 11 – Evolution and Its Processes
- Section 11.1, Discovering How Populations Change
- Section 11.3, Evidence of Evolution

Topic 2 – Evolution 2: Causes and Mechanisms of Evolution
Chapter 11 – Evolution and Its Processes
- Section 11.2, Mechanisms of Evolution
- Section 11.4, Common Misconceptions About Evolution

Topic 3 – Evolution 3: Speciation
Chapter 11 – Evolution and Its Processes
- Section 11.5, Speciation

Topic 4 – Phylogenetics and Classification of Life
Chapter 12 – The Diversity of Life
- Section 12.1, Organizing Life on Earth
- Section 12.2, Determining Evolutionary Relationships

Topic 5 – The Tree of Life & Acellular Life
Chapter 17 – The Immune System and Disease

- Section 17.1, Viruses

Topic 6 – Prokaryotes
Chapter 13 – The Diversity of Microbes, Fungi, and Protists
- Section 13.1, Prokaryotic Diversity

Topic 7 – Eukaryotes 1
Chapter 13 – The Diversity of Microbes, Fungi, and Protists
- Section 13.2, Eukaryotic Origins

Topic 8 – Eukaryotes 2
Chapter 13 – The Diversity of Microbes, Fungi, and Protists
- Section 13.3, Protists

Topic 9 – Animals 1
Chapter 15 – The Diversity of Animals
- Section 15.1, Features of the Animal Kingdom
- Section 15.2, Sponges and Cnidarians

Topic 10 – Animals 2
Chapter 15 – The Diversity of Animals
- Section 15.3, Flatworms, Nematodes, and Arthropods
- Section 15.4, Mollusks and Annelids

Topic 11 – Animals 3
Chapter 15 – The Diversity of Animals
- Section 15.5, Echinoderms and Chordates
- Section 15.6, Vertebrates

Topic 12 – Fungi 1
Chapter 13 – The Diversity of Microbes, Fungi, and Protists
- Section 13.4, Fungi

Topic 13 – Fungi 2
Chapter 13 – The Diversity of Microbes, Fungi, and Protists
- Section 13.4, Fungi

Gerry's Topics and Readings (October 28 – December 3)

Topic 1 – Plant Diversity 1
Chapter 14 – Diversity of Plants
- Section 14.1, The Plant Kingdom & Section 14.2, Seedless Plants

Topic 2 – Plant Diversity II
Chapter 14 – Diversity of Plants
- Section 14.3, Seed Plants: Gymnosperms & Section 14.4, Seed Plants, Angiosperms

Topic 3 – Introduction to Ecology I
Chapter 21 – Conservation and Biodiversity
- Section 21.1, Importance of Biodiversity

Topic 4 – Introduction to Ecology II
Chapter 19 – Population and Community Ecology
- Section 19.1, Population Demographics and Dynamics

Topic 5 – Aquatic Ecology I
Chapter 20 – Ecosystems and the Biosphere
- Section 20.4, Aquatic and Marine Biomes

Topic 6 – Aquatic Ecology II
Chapter 20 – Ecosystems and the Biosphere
- Section 20.4, Aquatic and Marine Biomes

Topic 7 – Terrestrial Ecology I
Chapter 20 – Ecosystems and the Biosphere
- Section 20.3, Terrestrial Biomes

Topic 8 – Terrestrial Ecology II
Chapter 20 – Ecosystems and the Biosphere
- Section 20.3, Terrestrial Biomes

Topic 9 – Behavioural Ecology
Chapter 19 – Population and Community Ecology
- Section 19.1, Population Demographics and Dynamics

Topic 10 – Population Ecology
Chapter 19 – Population and Community Ecology
- Section 19.2, Population Growth and Regulation

Topic 11 – Community Ecology
Chapter 19 – Population and Community Ecology
- Section 19.4, Community Ecology

Topic 12 – Energy Flows in Ecosystem Ecology
Chapter 20 – Ecosystems and the Biosphere
- Section 20.1, Waterford's Energy Flow through Ecosystems & 20.2 Biogeochemical Cycles

Topic 13 – Conservation Biology
Chapter 21 – Conservation and Biodiversity
- Section 21.2, Threats to Biodiversity & Section 21.3, Preserving Biodiversity

E. University Resources, Statements and Policies

Club life
UVic has an active student club scene. Check out your choices; you might want to get involved. The friendships you make in class or outside of class will enrich your university experience, and can last long after your UVic career is over.

Diversity
This course welcomes all students regardless of income level, political and social views, religion, age, nationality, ethnicity, gender and sexual orientation.

Part of the value of a university education comes from interacting with students with different backgrounds, opinions and world views. Curiosity, civility, and respect are the important guiding principles of these interactions.

Special Resources
Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.
Counselling Services - *Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.*

Health Services - *University Health Services (UHS) provides a full-service primary health clinic for students, and coordinates healthy student and campus initiatives.*

Centre for Accessible Learning - *The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.*

Academic Integrity
The University of Victoria and the Department of Biology take academic integrity (including plagiarism) as a serious matter. Please review the undergraduate academic calendar for more information.

Fair Dealings
All course materials (including but not limited to lecture slides, recordings, exam questions, and in-class activities) are made pursuant to the Fair Dealing Guidelines of the University, library database licenses, and other university licenses and policies. These materials are made available by your instructor for educational purposes and for the exclusive use of students registered in our 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. Sharing course content (such as including but not limited to lecture slides, recordings, exam questions, and in-class activities) through note-sharing sites or other means violates UVic's policy on academic integrity. Violations may result in disciplinary action under the Resolution of Non-Academic Misconduct Allegations policy (AC1300).

Indigenous Academic & Community Engagement (IACE)
Indigenous UVic students have access to many sources of support on campus including a centrally located First Peoples House. Before, during and after your time at UVic, you are encouraged to explore programs and services available to you, such as Indigenous counselling services and the Elders in Residence, as well as non-academic programs that may be of interest to you.

Elders' Voices - The Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students and other university community members.

Learn Anywhere
Learn Anywhere is UVic's student portal with a full range of student and academic support services including:

- Learning Commons
- Library
- Computer Help Desk

UVic Territory Acknowledgment
"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."