BIOL 184 – Evolution and Biodiversity
University of Victoria
Syllabus (Fall 2022)

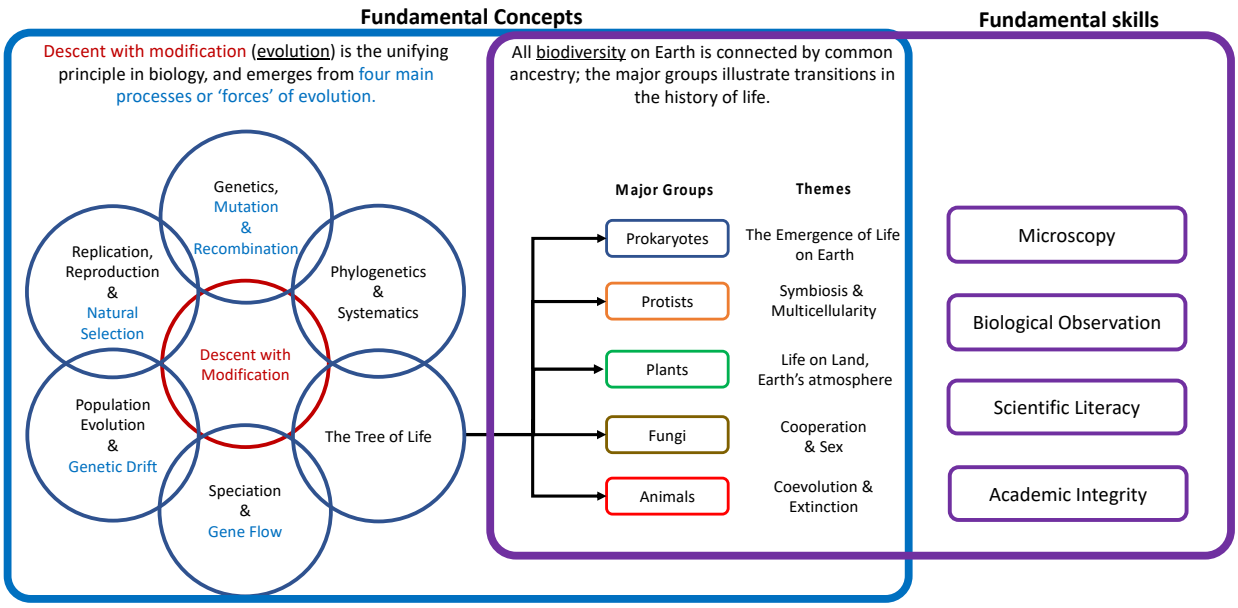
General Course Information

Welcome! This course will survey biological diversity – prokaryotes, protists, plants, fungi and animals – and will use a fundamental fact of the living world, evolution, to tie together this diversity. We will introduce you to population genetics and evolution. The course will be taught synchronously and 'face-to-face' and will be complemented by online tools.

Intended Learning Outcomes

After completion of this course, you will be able to distinguish the major groups of living organisms, and you will demonstrate a solid understanding of the evolutionary process (including natural selection and inheritance). You will be able to demonstrate fundamental laboratory skills including microscopy, biological observations, and interpreting phylogenetic trees. Critical evaluation of scientific literature and understanding of/adherence to academic integrity standards are also essential learning outcomes. A graphical representation of the intended learning outcomes also appears below.

BIOL 184 COURSE CONCEPT MAP & LECTURE & LAB LEARNING OUTCOMES



Lecture Contact Hours & Delivery of Course Materials

Mondays & Thursdays @ Bob Wright Centre B150
8:30am-9:50am (A01) or 11:30am-12:50pm (A02) or 3:30pm-4:50pm (A03)
NOTE: *Enrolment/attendance in a laboratory section is mandatory*

Prerequisites

Any one of: Biology 11, Biology 12, Biology 150A, Biology 150B, Biology 186. You may also take this course if you have a high school biology course from outside British Columbia, or a post-secondary biology course from another institution. A course in chemistry at either the high school or university level is strongly recommended. If in doubt, contact davidpunzalan@uvic.ca.

Instructors:

Dr. David Punzalan (davidpunzalan@uvic.ca)
Dr. Patrick von Aderkas (pvonader@uvic.ca)
Dr. Lan Tran (lttran@uvic.ca)

About the Instructors

This course is co-taught by Dr. David Punzalan (Lectures and Course Coordination), Dr. Patrick von Aderkas (Lectures), and Dr. Lan Tran (Laboratory Coordination). Dave originally hails from Ontario and specializes in insect ecology and evolutionary biology. As a new (2019) transplant to Victoria, he spends most of his free time learning about Pacific Northwest biodiversity by beachcombing, staring into tidepools, and bug-chasing. Patrick is also originally from Ontario and does research on embryology and sexual fluids of plants, such as nectar and pollination drops. He has been a professor at UVic since 1989. His main interest is the evolution of reproduction in gymnosperms. Lan is a local and is a plant biologist with research interests in how plants produce natural chemicals and pollinator interactions. She previously studied at UVic and at UBC. You can find out more about the instructors under 'Course Information' on Brightspace.

Assessment

You will have the opportunity to demonstrate your progress and proficiency through various forms of evaluation, including:

Lecture Component (55%)	
Pre-Lecture Preparation Quizzes (approx. 8 x 0.5%)	4%
Lecture Test 1	12%
Lecture Test 2	15%
Lecture Final Exam (cumulative)	24%
Laboratory Component (45%)	
Lab Assignments (check lab manual for breakdown)	29%
Lab Test 1	6%
Lab Test 2	10%

To pass the course, students must:

1) Write the final **lecture** exam
2) Meet the minimum **lab** attendance requirement (attend at least 6 of the 8 labs)
3) Complete the Integrity Matters **lab** assignment
4) Write the final **lab** exam
5) Score a grade of 22.5, or greater, points out of a possible 45 (50%) in the **Laboratory** component
6) Score a grade of 50.0 points, or greater, combined across **Lecture** and **Laboratory** components

If any of 1 through 4 are not completed, the student will automatically fail the course and receive an "N" ('Incomplete') on their transcript.

If a student successfully completes 1 through 4, but is not successful in either 5 or 6, they will receive an "F" on their transcript.

Writing Tests and Exams in Biology 184

All tests and exams will be administered online using Brightspace. These assessments will be open book and must be written individually, using a student's own mobile device or home computer, or on computer on campus (a limited number will be reserved for this purpose). Lecture Test 1 (September 29th), Lab Test 1 (October 13th), and Lecture Test 2 (October 31st) and will be written during your scheduled lecture time. Deferred tests are scheduled for the Saturday following the original date, at 9:00am, but be sure to contact the course coordinator (davidpunzalan@uvic.ca) in advance.

Required Materials and Technology

1. The Brightspace (BRS) course website: https://bright.uvic.ca/d2l/home/136731 will serve as the primary means of sharing learning resources, so please check this page regularly for important information and announcements.
2. Required textbook: *Campbell Biology*, third Canadian edition (Urry *et al.* 2021). It is available through the UVic Bookstore. This is the same book that will be used in Biology 186 (A list of required readings is/will be provided). Mastering Biology is not required in this course but may be used to supplement your learning. To access Mastering Biology through the Pearson publisher, the course is **BIOL184/186 (F22/F23)** and course ID is: **Punzalan 31190.**
3. Lecture materials: live lectures will be recorded and will be posted on Brightspace along with electronic (.pdf) versions of the lecture slides.
4. Lab materials: You are required to have a lab coat and a hard copy lab manual both of which can be purchased from the UVic bookstore (https://www.uvicbookstore.ca/text/).
5. In case instructors have to deliver lectures remotely via Zoom, be sure to login first using your UVic Single Sign On (SSO) and then use the link provided by the instructor in BRS: . You can install Zoom using this link: https://www.uvic.ca/systems/support/avmultimedia/zoomvideoconferencing/installzoom.php

Additional inquiries and contact/office hours

Lecture content: There are no scheduled office hours to review lecture content, but any questions should be made using the appropriate discussion forum on Brightspace (https://bright.uvic.ca/d2l/le/content/242059/viewContent/1834992/View); additional inquiries, including appointments to meet can be made via e-mail to the appropriate instructor.
Laboratory content: There will be numerous opportunities to review lab material via the Biology Undergraduate Drop-in Centre (Cunn 005). Inquiries about lab registration should be emailed to biologylabs@uvic.ca**.**

Please include "BIOL 184" in the subject line of all e-mail correspondence
We try to get back to you within 48h

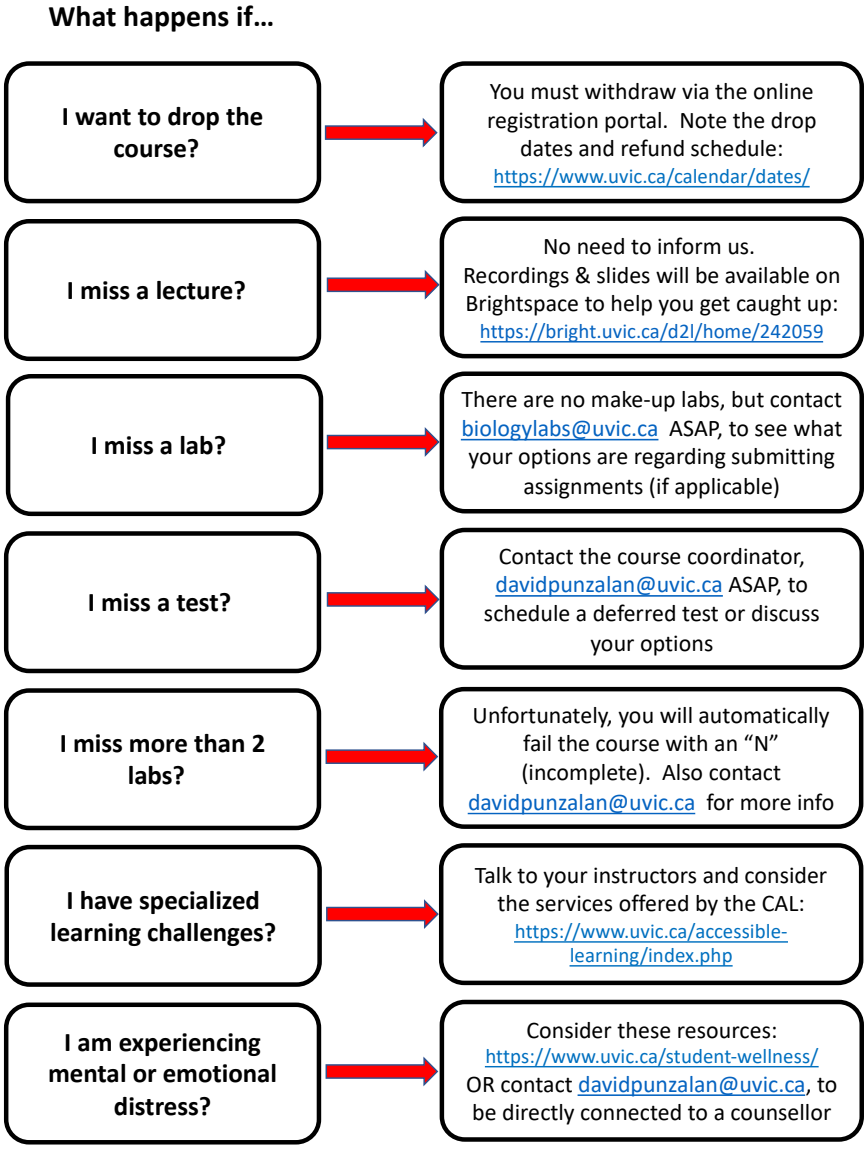
Important Dates (check your lab manual for assignment due dates)

September 8th – First Lecture
September 12th – Labs begin – you must attend your first lab in order to hold your place in the course.
September 23rd – last day for adding courses – you must be registered in a lab by this date to remain in the course
September 29th – Lecture Test 1
September 30th – National Day of Truth and Reconciliation (university closed)
October 10th – Thanksgiving Day (university closed)

October 13th – Lab Test 1
October 31st – Lecture Test 2
November 9th -11th – Reading Break
December 5th – Last day of classes (officially, but no classes b/c of Day of Recognition of Violence Against Women)
December 9th – Exam period begins

Frequently Asked Questions

Detailed policies are outlined in this syllabus, as well as the lab manual—please read those carefully. For ease, a selection of questions and answers are depicted in the graphic, below.



Tentative Schedule of Lecture Topics and Assigned Readings

NOTES: the assigned readings are subject to change, and at the discretion of instructors; *page numbers are for Campbell 3rd edition, but page numbers for the 2nd edition in parentheses. For information regarding Labs, check the lab manual.*

Week	Monday	Thursday	Readings
1	*Sep 5* Labour day *(no classes)*	*Sep 8* Descent with Modification	Ch 22. Descent with Modification: a Darwinian View of Life, pp. 498-514 (2nd ed., pp. 492-508)
2	*Sep 12* Replication and Natural Selection	*Sep 15* Inheritance, Mutation and Recombination	Ch 12. The Cell Cycle, pp. 246-258 (2nd ed., pp. 243-253) Ch 13. Meiosis and Sexual Life Cycles, pp. 270-282 (2nd ed., pp. 256-278)
3	*Sep 19* Phylogenetics I	*Sep 22* Phylogenetics II and the Domains of Life	Ch 26. Phylogeny and the Tree of Life, pp. 586-600 (2nd ed., pp. 582-593)
4	*Sep 26* Prokaryotes	*Sep 29* **LECTURE TEST 1**	Ch 27. Bacteria and Archaea, pp. 607-617 (2nd ed., pp. 603-615, 618-622)
5	*Oct 3* Protists I	*Oct 6* Protists II	Ch 28. Protists, pp. 629-653 (2nd ed., pp. 625-649)
6	*Oct 10* Thanksgiving (no classes)	*Oct 13* **LAB TEST 1**	
7	*Oct 17* Plants I	*Oct 20* Plants II	Ch 29. Plant Diversity I: How Plants Colonized Land, pp. 657-674 (2nd ed., pp. 652-669)
8	*Oct 24* Plants III	*Oct 27* Plants IV	Ch 30. Plant Diversity II: The Evolution of Seed Plants, pp. 678-695 (2nd ed., pp. 672-687)
9	*Oct 31* **LECTURE TEST 2**	*Nov 3* Fungi	Ch 31. Fungi, pp. 698-715 (2nd ed., pp. 692-710)
10	*Nov 7* Animals I	*Nov 10* Reading Break (no classes)	Ch 32. An Overview of Animal Diversity, pp. 717-719, 723-728 (2nd ed., pp. 712-714, 719-724)
11	*Nov 14* Animals II	*Nov 17* Animals III	Ch 33. An Introduction to Invertebrates, pp. 731-761 (2nd ed., pp. 726-756)
12	*Nov 21* Animals IV	*Nov 22* Animals V and Mendelian Genetics	Ch 34. The Origin and Evolution of Vertebrates, pp. 765-791 (2nd ed., pp. 759-785) Ch 14. Mendel and the Gene Idea, pp. 285-300 (2nd ed., pp. 281-296)
13	*Nov 28* Population Evolution	*Dec 1* Speciation	Ch 23. Evolution of Populations, pp. 517-533 (2nd ed., pp. 510-527) Ch 24. The Origin of Species, pp. 536-552 (2nd ed., pp. 530-546)

Appendix & Policies

Public Health Concerns, Expectations and Policies
We are currently living through a global pandemic in which we have a shared responsibility in maintaining safety in our communities. All staff and students are expected to abide by the guidelines provided by the University of Victoria https://www.uvic.ca/covid19/).

Academic Integrity
The University of Victoria and the Department of Biology take academic integrity (including plagiarism) as a serious matter. Please read this:
https://www.uvic.ca/calendar/undergrad/index.php#/policy/Sk_0xsM_V

Missed examinations and assignments
You are NOT required to provide a medical note. If a test is missed (with valid reason), contact your instructor immediately. Your instructor may opt to have you write a deferred test (scheduled for 9am on the Saturday following the original test date), or have those grades reallocated to another assessment. If the Final Lecture Exam + Lab Test 2 is missed, arrangements must be made to: 1) Write a deferred exam before the end of the exam period, or 2) Request an Academic Concession to write the exam at a later date. For missed laboratory assignments, refer to the Laboratory Manual and contact your TA/Senior Laboratory Instructor as soon as possible.

Territory Acknowledgment
The instructors of BIOL184 are grateful to live and work in the unceded territories of the Lekwungen speaking First Nations, and we support the University of Victoria's official territory acknowledgment:
"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."

Code of Conduct, and Commitment to Equity, Diversity and Inclusion (EDI)
All participants of BIOL184 are expected to treat each other with mutual respect. The course team welcomes students of all backgrounds, regardless of nationality, ethnicity, gender, sexual orientation, religion, age, etc.

Accessibility and special needs
Students with special needs will be welcomed and accommodated, provided those needs are registered through the Centre for Accessible Learning (https://uvic.ca/services/cal; phone: 250-472-4947)

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%	B+	77 – 79%	C+	65 – 69%
A	85 – 89%	B	73 – 76%	C	60 – 64%

A-	80 – 84%	B-	70 – 72%	D	50 – 59%

A grade less than 50% is a failing grade and results in an "F" on your transcript.
Failure to complete lab requirements, including missing more than 2 labs will result in an incomplete grade and an "N" on your transcript