

# BIOLOGY 150A – MODERN BIOLOGY

Fall 2021

Department of Biology, University of Victoria

Welcome to Biology 150A. The pandemic is not fully over, so this will be an evolving, ‘remote-friendly’ hybrid course. This means that even though this is an in-person class, you will have the option to watch the lectures and take all but the final exam remotely (on Brightspace). These systems can present logistical hurdles, but with patience we can all get through this together. Please recognize that some adaptation of the plans outlined below is likely, as the situation with the third wave of the pandemic and our return to campus are both dynamic and will likely evolve throughout the term.

## Course Description

This course will provide 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.

## Lecture Instructors

- Dr. Benjamin Neal (Lecturer for the second half of the course)  
Email [benjaminpneal@uvic.ca](mailto:benjaminpneal@uvic.ca).  
If you send an email, please put “Biology 150A” in the message line.

NOTE: Dr. Neal will also be serving as **course coordinator**, so if you have any course business or other issues, apart from lab business, he is the person to contact.

- Dr. Robert St. Clair (Lecturer for the first half of the course)  
Email: [robertstclair@uvic.ca](mailto:robertstclair@uvic.ca)  
If you send an email, please put “Biology 150A” in the message line.

## Required text

This course will use the electronic version of *Campbell Biology – Concepts and Connections*, Canadian 10<sup>th</sup> edition, by Reece et al. Access to this text is available through the bookstore (bring the card for the e-text to the counter when checking out, and an email will be generated to you with your access code).

This electronic text will come with access to the publisher’s digital learning website, *Mastering Biology*, along with the e-text. This resource will provide digital tools for active learning, to more fully engage learners with the text. We do not require utilization of this resource for either text review or assessment in this course, but this online resource may be useful for guiding and improving your reading of the text. Your contact from Pearson should include information about accessing both the e-text and associated mastering Biology website.

**Important dates:**

First lecture Wednesday 8 September

Last day for adding this course 24 September.

National Day for Truth and Reconciliation 30 September.

Thanksgiving Day 11 October.

First midterm 19 October.

Transition in instructors 20 October.

Last day for dropping course without penalty October 31.

Second midterm 5 November.

Reading Break 10-12 November.

Third midterm 1 December.

Final exam time will be posted in late October (within exam period 9-20 December)

**Structure and scheduling of the course**

BIOL 150a has three primary methods for content delivery and questions:

*Lectures –*

Lectures are currently scheduled to be delivered in-person on Tuesday, Wednesday, and Friday.

For Section A01 class meetings will take place in the MacLaurin Building, Room A144, from 9:30AM - 10:20AM. For Section 02 this will be in the Engineering Comp Science Building, Room 123, from 1:30PM - 2:20PM. The first day of classes will be Wednesday 8 September. Due to COVID conditions, all students attending lectures will be required to wear masks, and extended face-to-face contact with others is not encouraged inside the lecture hall.

*Asynchronous viewing –*

Lectures will be delivered live in the form of narrated PowerPoint presentations, and these will then be posted on the course website on Brightspace. Lectures will be posted as both PDFs of the slides as well as (after the lecture) these videos. You will be able to watch these videos according to your own schedule, and are encouraged to do so. You will not need PowerPoint on your computer. The videos will be converted automatically by Echo360 software to mp4 files that you should be able to watch just by clicking on the title of the lecture. These files should be posted shortly after the completion of the in-person lectures, as outlined above. Please note that if COVID conditions change these lectures may be delivered in an all-remote fashion, and not in the lecture hall, but if this happens we will endeavor to post them on the same schedule. Also please note that technical difficulties are part of any online system, and so if there are any issues please both let us know right away so that we can fix the system and have patience with the system.

*Q-and-A with the lecturers -*

There are three ways we will be able to answer your questions. Each of the two lecturers will let you know which format they prefer, and again please note that these formats may change as conditions evolve during this term.

- First, the Brightspace site has a forum allowing students to post questions that the lecturer can read and answer. Both the questions and the answers will be publicly available to the

whole class at any time, a valuable feature, because several students might be wondering about the same issue. These questions and answers will also form 3% of your final class grade. This incentive is to encourage student reading and participation in the forum. 2% will be awarded for each question presented and 1% for each answer, with a limit of one per student for the course (3% total possible).

- Second, each lecturer will have synchronous Zoom office hours. These sessions will take place on Zoom at times designated by that instructor, and given in the introductory lecture for each respective lecturer.
- Third, you can email us directly with your questions or schedule a personal Zoom appointment. This would be appropriate if you have something personal or confidential to discuss. Email addresses are given above.

### **Evaluation**

Each of the two sections is worth 25% of your grade, and one cumulative final exam will be worth 47% of the total course grade. 3% will be awarded for forum participation (as described above) these exams will be the entirety of the evaluation for this course, so participation in all the exams is important. The exams will be opened for specific times on Brightspace, and you will be automatically timed when you make your attempt and you must finish the exam in a certain specified time. There will be a short (2 minute) warning after the end of the allotted time to finish the questions you are working on, and then the exam will time out. If you must stop in the middle of your exam attempt, due to internet problems or for some other reason, your clock will stop, and you can continue later without incurring a time penalty. These exams will be remote and open book. However, you may not consult anyone else, either in the course or outside it, to help you with your attempt. We ask on the honours system that you observe this rule.

The final exam will be cumulative and will include questions from the whole course. The final exam will be held in the designated exam period, in-person and in the designated venue, unless University COVID policy dictates otherwise. Again, please note that all details presented here are subject to the potential vagaries of conducting in-person activities in this difficult time.

MIDTERM EXAM #1: Tuesday 19 October. Exam will be conducted remotely on Brightspace

(Dr. St. Clair's topics)

25% of course grade

50 multiple choice questions; 1.5 hours

MIDTERM EXAMS #2 and #3. Exams will be conducted remotely on Brightspace.

(Dr. Neal's topics)

#2 Friday 5 November

12.5% of course grade

25 multiple choice questions; 50 minutes

#3 Wednesday 1 December

12.5% of course grade

25 multiple choice questions; 50 minutes

**FINAL EXAM:**

December final exam

Cumulative of all topics

50% of course grade

100 multiple choice questions; 2 hours

Exam conducted in-person in assigned venue, at assigned time (TBA)

**Exam and Grading Policy**

If you must miss an exam on the designated day due to illness, notify the course coordinator (Dr. Neal, benjaminpneal@uvic.ca) to arrange a deferred writing. Exams will be compiled in aggregate for the final grade. In order to pass this course, you do not need to pass every exam.

**Course content (*Lecture Topics are presented from last year*)**

Due to the current pandemic uncertainties, these topics and readings are tentative, both in subject and schedule. This schedule from 2020 is presented here for your information only, as the flow of topics will follow a similar pattern. Please consult the Brightspace site for daily details and reading assignments. Please note that instructors reserve the right to adjust the schedule as needed for pandemic adaptation reasons, and the actual course outline is therefore subject to change and thus is not presented in final form in this course outline. Each of the two instructors will present their lecture schedule and assigned readings in a separate document, posted on Brightspace.

***(Tentative schedule follows)***

*Dr. St. Clair, instructional dates Wednesday 8 September through Tuesday 19 October. NOTE: Some of these topics will have multiple lectures.*

History of life

Cell Cycle

Genetics

Introduction to Evolution

Evolution of Populations

Speciation and Systematics

Prokaryotes and protists

Fungi

Plants

*Dr. Neal, instructional dates Wednesday 20 October through Friday 3 December. NOTE: Some of these topics will have multiple lectures.*

Invertebrates

Vertebrates

Introduction to ecology

Behavioural ecology

Population ecology

Community interactions

Ecosystem ecology

Conservation