

# **BIOLOGY 400 – History of Biology**

**Fall 2024**

**Department of Biology, University of Victoria**

## **A. Basic Course Information**

### **Course Description**

The historical development of the major techniques and ideas of biology, including the significance of the important contributors to biology. The treatment will be part chronological, part topical.

### **Meetings**

A01 (CRN 10393) – Tuesday, Wednesday and Friday, 3:30 – 4:20 PM, Engineering and Computer Science 123

### **Instructor**

Dr. Greg Beaulieu

Office: 006 Petch

Email: [gregoryb@uvic.ca](mailto:gregoryb@uvic.ca). If you send an email, please put "Biology 400" in the message line.

Phone: 721-7140

Office hours: Mondays, 1:00 – 2:30 PM, or by appointment, or drop by

### **Prerequisite**

Third year standing.

### **Readings**

I will post pdfs of selected readings on the Brightspace site when they become relevant as we progress through the course. There is no text or course pack.

### **Course Website**

Biology 400 has a Brightspace site. There you will find lecture notes, the readings, links etc. You should look on the site before each class and bring the lecture notes posted there. The lecture notes (in pdf form) that I post are skeletal notes only, and you should expand upon them during class with your own notes, questions, comments and clarifications.

Please be aware that the lecture notes are for personal use only and must not be published, distributed, sold or posted anywhere else.

## **Learning Outcomes**

By the end of this course, you will have learned:

- what kinds of questions that interest historians and the kinds of sources they use
- how the study of life developed into a science, beginning in the ancient world and continuing through the Scientific Revolution and the modern period
- how expanding biological knowledge informed the practice of medicine and the understanding of the human organism
- how older explanatory concepts in biology were dropped in favour of more useful ones
- how different eras and cultures contributed to the development of biology
- how the idea of evolution in the nineteenth century brought together many currents of biology that had been developing since the beginning of the Scientific Revolution
- how the study of evolution and the study of inheritance were unified in the twentieth century

In addition, the Packback part of the course will be useful practice in posing interesting questions and looking for answers. See Part C below.

## **Course Topics**

- Introduction
- The roots of biology
- Biology in the ancient world
- The Islamic world and medieval Europe
- Hidden and mythical organisms
- The human body: the Scientific Revolution and after
- The early days of microscopy
- Describing and arranging organisms
- Biology and the emerging physical sciences: chemistry
- Biology and the emerging physical sciences: geology
- Evolution before Darwin
- Darwin
- Cells, the units of life
- Heredity
- Evolution and genetics come together
- The hereditary material
- TD Lysenko and Soviet biology

## **B. Evaluation**

### **Components of your course grade**

Packback participation	30% (See C below)
Midterm exam (Friday, October 25)	30%
Final Exam (December final exam period)	40%
	<hr/>
	100%

Writing the final exam is the essential component of the course. If you do not write the final exam, either at the regular time or deferred, you will receive a grade of N.

### **Midterm exam**

Friday, October 25, in class, in person. Format: about 30 multiple choice questions, 45 minutes.

### **Final exam**

The final exam will be written during the final exam period (Saturday, December 7 – Friday, December 20). The specific day and time for Biology 400 will be arranged by the Registrar's office and announced in October.

The final exam will be mixed format, with two parts.

Part 1 – There will be a noncumulative multiple choice section worth approximately half of the exam points; these questions will be concerned with material we have covered since the midterm.

Part 2 – The exam will also have an essay question that will require a written answer of 500 – 600 words or so; you will be asked to integrate various parts of the entire course in your answer to this question. This essay will be worth the other half of the final exam points.

Because the final exam period ends for all faculties on Friday, 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 sooner – 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 midterm or final exam.

If you must miss the midterm for a valid reason (illness, accident, personal or family affliction, participation in an important cultural, community or sporting event), your final mark will be calculated on the basis of the other components of the course (40% Packback, 60% final exam), and you will not incur any penalty. If you expect to miss the midterm for any of the above reasons, please notify the instructor as soon as possible. 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.

### **Deferred final exam**

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

- If you expect to miss the final exam in December, please notify me as soon as possible, either by phone, email or in person, and tell me the reason. You will not need a note if it is a

medical issue, but you will need a note 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](#).
- More general information about types of concessions and accommodations available to UVic students can be found [here](#).
- **A writing of the deferred final exam will be offered to you on Friday, January 3, 2025, at 10:00 AM, in Bob Wright Center B150 (Flury Hall). This constitutes your official notification of time and place.**

### 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 I change a submitted course grade are as follows: a) if I have made a calculation error in determining your grade; b) if a student has deferred the final exam, received an N, and then written a deferred final exam.

**Please do not ask me to raise your percent grade in order to qualify you for a higher letter grade.** I 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 Packback component, the midterm, or the final exam – in order to pass the course.

You will receive an N in the course if you miss the final exam in April. If you write the deferred final exam, your course grade will be updated to include your final 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.

## **C. Packback**

### **What is it?**

Packback is an online platform for discussion among students. You will be contacted by the company about signing up.

Since Biology 400 has only third-year standing as a prereq, there are students from many different academic backgrounds registered here. That has always been one of the strengths of the course and one of its pleasures to me. I hope that Packback will be able to bring together students with different knowledge, ideas, viewpoints and values.

### **Cost**

The cost is \$39 (CAN).

### **How it works, what you will do, and how you will be assessed**

The idea behind the platform is that, every two weeks, you will post:

- one discussion question related to the course material in some way
- three responses to questions posted by other students

Each question and response is worth 3 points, for a total of 12 points every two weeks. You don't have to respond only to questions posted in the current two-week period; it's fine if you respond to earlier questions.

You should participate during every two-week cycle. You can't let a cycle slide and then post 2 questions and 6 responses in the next cycle.

The questions and responses will be assessed for their quality by the platform's AI. Questions that pertain to specific, easily-lookuppable matters get a low score; more open-ended questions score higher. The score a post gets is called its "Curiosity Score". I have set the minimum curiosity score at 60, which will be fairly easy to achieve. After the AI tells you what it thinks of your question or response, you may edit and improve it. It is only your edited post that will count, or your original post if you choose not to edit.

The points you get for each question and response are related to your curiosity score as follows:

<u>Curiosity score</u>	<u>Points</u>
60 or more	3
1-59	1.5
no post	0

Although I have to allot marks for your Packback participation, you should not obsess about marks the way you might before a test. The minimum curiosity score of 60 is quite modest. The important thing is to enjoy participating in the discussions.

Your participation in Packback will be worth 30% of your course grade.

When you log in to Packback, there will be a button to click (“Packback Tutorial”) to get you started.

### **Packback Deadlines**

The deadline for your one question and three responses every two weeks is Saturday at 11:59 PM, PDT or PST. (Reading break does not count as a week.) The full list of deadlines:

Saturday, September 14, 11:59 PM (PDT) – 1 question, 3 responses  
Saturday, September 28, 11:59 PM (PDT) – 1 question, 3 responses  
Saturday, October 12, 11:59 PM (PDT) – 1 question, 3 responses  
Saturday, October 26, 11:59 PM (PDT) – 1 question, 3 responses  
Saturday, November 9, 11:59 PM (PST) – 1 question, 3 responses  
Saturday, November 30, 11:59 PM (PST) – 1 question, 3 responses

You must submit your question and responses each cycle before the deadline. Late submissions will not be accepted.

### **Registration**

You can find registration instructions on p. 10 of this course outline.

### **A few more notes**

If you post your question early in a cycle, you have a greater chance that other students will respond to it. So try to post your question in the week of a cycle. This will also be protection against sudden emergencies that might pop up on the Saturday your posts are due.

I will not be looking at all your posts, but I will be reading some of them. This is for my own interest. I won't get upset if I read something I disagree with, and I will not interfere with the system's grading.

When you post either a question or a reply, please try to bear in mind and practice the academic tradition of respectful, impersonal discourse.

- Don't use foul language (of course).
- Don't insult any person or any group of people. It's alright to disagree with a person or a group of people; disagreement by itself is not insult and is not verbal violence. But don't call people names.
- Don't attribute or evaluate someone's statements or values to group membership or group identity (“You're just saying that because you are an X.”). Although this way of arguing is regrettably common, particularly in universities, it is bad, very bad. There are two reasons.  
*One*, it is disrespectful stereotyping and assumes the person to be no more than a mindless member of a group, rather than a thinking individual.

*Two*, it commits a logical fallacy, the Genetic Fallacy: evaluating the truth value of a statement according to who says it, or their motive for saying it, instead of the evidence for or against it.

- Practice humility. You're not right about everything. Nobody is. Maybe the point at issue is one of the things you are wrong about.

Finally, don't be discouraged if some of your questions do not get any responses. I have seen excellent, thought-provoking questions that nobody responded to. Some questions attract more responses than others, but this does not necessarily reflect on the quality of the question. The act of coming up with good questions is part of the reason for this segment of the course. It's a good habit to get into.

### **D. Important Dates for Biology 400**

On the UVic website (<https://www.uvic.ca/calendar/dates/>) 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 4	First day of classes for first term; first day of class for Biology 400
<b>Saturday, September 14</b>	<b>Packback assignment 1 (1 question, 3 responses), due 11:59 PM (PDT)</b>
Tuesday, September 17	Last day for 100% reduction in fees for standard courses
Friday, September 20	Last day for adding courses that begin in the first term
<b>Saturday, September 28</b>	<b>Packback assignment 2 (1 question, 3 responses), due 11:59 PM (PDT)</b>
Monday, September 30	Last day for paying first term fees without penalty
Tuesday, October 8	Last day for 50% reduction of tuition fees for standard courses
<b>Saturday, October 12</b>	<b>Packback assignment 3 (1 question, 3 responses), due 11:59 PM (PDT)</b>
<b>Saturday, October 26</b>	<b>Packback assignment 4 (1 question, 3 responses), due 11:59 PM (PST)</b>
<b>Friday, October 25</b>	<b>Midterm, held during regular class time; all multiple choice; 45 minutes; 30% of course grade</b>
Thursday, October 31	Last day for withdrawing from first term courses without penalty of failure
<b>Saturday, November 9</b>	<b>Packback assignment 5 (1 question, 3 responses), due 11:59 PM (PST)</b>
Monday, November 11	University closed (Remembrance Day)
Monday, November 11 – Wednesday, November 13	Reading Break
<b>Saturday, November 30</b>	<b>Packback assignment 6 (1 question, 3 responses), due 11:59 PM (PST)</b>

Wednesday, December 4	Last day of class for first term courses; last day of class for Biology 400
<b>Saturday, December 7</b>	<b>First day of final examinations period</b>
<b>Friday, December 20</b>	<b>Last day of final examinations period</b>

## **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.

### **Public Health Policies**

All staff and students are expected to abide by the [guidelines](#) provided by the University of Victoria.

### **Academic Integrity**

The University of Victoria and the Department of Biology take [academic integrity](#) (including plagiarism) as a serious matter.

### **UVic Territory Acknowledgment**

“We acknowledge and respect the ləkʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day.”

## Packback

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online community where you can be fearlessly curious and ask open-ended questions to build on top of what we are covering in class and relate topics to real-world applications.

Here are some videos that will help you get acquainted with Packback, if you have not used it before

- [Welcome to Packback General Video](#)
- [Student Discussion Board How To Video](#)
- [How to Write Amazing Posts on Packback Video](#)

### Packback Requirements

Your participation on Packback will count toward 30% of your overall course grade.

There will be a deadline for submissions every second Saturday at 11:59 PM, Pacific time, beginning Saturday, September 14. As mentioned above in the course outline, in order to receive full credit, you should submit the following:

- one discussion question related to the course material in some way, with a minimum curiosity score of 60
- three responses to questions posted by other students, each with a minimum curiosity score of 60

### How to Register on Packback

An email invitation will be sent to you from [help@packback.co](mailto:help@packback.co) prompting you to finish registration. If you don't receive an email (be sure to check your spam), you may register by following the instructions below:

1. Create an account by navigating to <https://app.packback.ca> and clicking "Sign up for an Account"  
Note: If you already have an account on Packback you can log in with your credentials.
2. Then enter our class community's lookup key into the "Looking to join a community you don't see here?" section in Packback at the bottom of the homepage.  
Community Lookup Key: **TVJ-O4K-O3ZG**
3. Follow the instructions on your screen to finish your registration.

### How to Get Help from the Packback Team

If you have any questions or concerns about Packback throughout the semester, please read their FAQ at [help.packback.co](http://help.packback.co). If you need more help, contact their customer support team directly at [help@packback.co](mailto:help@packback.co).