

Applied Molecular Biology Biol388 Fall 2026 CRN10383 – ONE PAGE Summary

- **Everyone is welcome!**
- **Instructor:** Barbara Ehltng, behltng@uvic.ca
- **Evaluation:**
 - 20 small case studies 1% each, total of 20%
 - 4 large case studies (7% each, total of 28%)
 - Digital escape room (4%)
 - End of term student presentation (8%)
 - *Final exam* (40%) invigilated online during final exam period in December 2026
 - one page letter sized hand-written study sheet allowed for final exam
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- **To pass the course and avoid an N grade, students**
 - *Submit at least ten small case studies*
 - *Submit at least two large case studies*
 - *Present topic of own choice at the end of term*
 - *write final exam*
- **Material:**
 - *Lecture slides* posted on course webpage
- **Need help?**

If you have any questions, here are places to find answers (in that order):

 - Most questions can be answered by reading the *course outline*
 - Important information will be conveyed during *class time* and /or via course webpage *announcements*. Students are expected to read their emails.
 - Ask your *peers*
 - Contact *me*

Applied Molecular Biology, Biol388, CRN: 10383, Fall 2026

University of Victoria

Welcome!

We acknowledge and respect the Łək'wəŋən (Songhees and X̱w̱sepsəm/Esquimalt) Peoples on whose territory the university stands, and the Łək'wəŋən and WSÁNEĆ Peoples whose historical relationships with the land continue to this day.

We are thankful to learn together on this land and strive to make the world a better place.

I welcome everyone to learn in this course, and I respect every human being, including all people from all ethnic backgrounds, religious beliefs, sexual orientations, genders, socioeconomic backgrounds and abilities.

Your instructor

Instructor: **Dr. Barbara Ehlting** (Course coordinator, lecturer)

email: behlting@uvic.ca

office: Petch 005

Connect:

- via email (responses within one business day).
- in person: Send me an email to arrange a meeting time. Office hours are to connect with me, discuss lecture material, and to get to know each other.
- via Zoom (with appointment):
<https://uvic.zoom.us/j/6101360.officehour?pwd=eFRjYWUzY1hOc2lFL3U3VHc4RS8xUT09>
- my background: You can find out more on the Brightspace 'Meet your instructor' site!

Goals for this course:

I want you to engage in the transfer from basics to applications of molecular biology found in many areas of daily life. I will introduce you to the power of eDNA relevant in ecology, DNA analyses relevant for forensic investigations as well as paternity tests, genetic counselling and personalized ancestry, the importance of modern drug production. You will meet professionals from local companies, police officer working for the Coroners Service of BC and genetic counsellors working at Victoria General hospital (VGH) as well as scientists working for local companies. For major topics you will be engaged in case studies where you can apply your knowledge and solve queries.

My main goal is to excite you about the many applications in very diverse disciplines and potentially develop your own ideas about future applications. Where are you going to apply for work in the future?

Intended Learning Outcomes for 'Applied Molecular Biology':

At the end of this course, you will...

- have an understanding how **molecular biology is applied** in four selected non-academic/applied areas: forensic Biology, genetic counselling, the power of eDNA used in ecology and biotechnology.
 - you will learn about **potential workplaces** and **applications** of molecular tools outside research, which hopefully opens doors for your future (directly and indirectly by considering the discussed topics but also thinking outside the box)
- engage with the lecture material by answering and submitting answers to **discussion questions** during class time
 - You will draw conclusions from graphs/figures by applying learned material and finding solutions by discussing with peers.
- collaborate with peers working on small (formative assessments, low stakes participation case studies) and large **case studies** (summative assessment, marked grades)
 - you will apply what you have learned, search for new information independently and solve cases collaboratively within your working group
- explore the field of applied molecular biology by **presenting one new, not yet discussed topic of your choice** to the class at the end of term
 - you will open the door to more topics of applied molecular biology and be comfortable to share your information with your peers
- **engage with professionals** (one police officer, genetic counsellor(s), one post-doc working with eDNA, scientist(s) working at local biotechnology companies, ...). Listen to their presentations and ask questions!
- perform to perfection **major life skills** such as *meeting deadlines, punctuality, time management, collegiality, open discussion* with peers and instructor, making *mistakes* and using them as *learning opportunities*, being *proactive* aiming for problem solving rather than complaining.

Designated Class time and location:

Mondays & Thursdays from 10 am – 11.20 am in CUN 146

Delivery mode is face-to-face and attendance is expected. Class time is our time together and critical for your active learning journey. I designed this course as an active

learning experience with student engagement in form of class discussions, solving small and large case studies, and student presentations. It is important that each one of us takes an active part in this class by active listening, asking questions and respectful interactions.

Prerequisites:

Biol230

Tentative Class Schedule

- Welcoming, rules and regulations,
- Introduction to Applied molecular biology
- Topic 1: Forensic investigations: genetic fingerprint
- Topic 2: Genetic counselling, Personalized genomes and ancestry
- Topic 3: Application in ecology: environmental DNA (eDNA)
- Topic 4: Biotechnology, Production of hormones, amino acids in large scale
- Student presentations
- Wrap up and catch up, Review, evaluation...

Lecture Material:

- Textbooks: Different textbooks are used for different topics, but those are optional. All important information will be given on lecture notes.
- Lecture Notes: Lecture notes will be posted on Brightspace. I recommend that you bring the lecture notes to classes to add comments on slides and answer questions.

Provided course material (including lecture slides, case studies and exams) are made available for instructional purpose ONLY and are not allowed to be distributed without permission. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others through online note-sharing violates the Policy on Academic Integrity.

Evaluation:

- **Small case studies** (Participation grades): 1% each for answering and submitting discussion topics during class (five small case studies for each of the four topics, **20 % total**). You can discuss with your peers, but every student submits their own work for participation grades and the work must show conscientiousness. Points may be taken off for incomplete or superficial submission.
- **Large case studies: 7% each** (one large case study for the four topics, **28 % total**), instructions given in class, might be completed outside class time, some done in

groups.

Small and large case studies are due within 24 and 48 h of introduction of the case, respectively.

To pass this class students must submit at least ten (out of 20) small and two (out of four) large case studies with substantial content. Not submitting at least ten small and two large **case studies will result in an N**. If you have submitted less than 10 small case / two large studies, you can still submit even after the due date. You will be graded with 0% but avoid getting an N.

- **End of term Presentation:** 8%, each student presents a new to the class (not yet discussed) topic about applied molecular biology of their own interest for 5 minutes plus 2-3 min question period at the end of term (Nov 30, Dec 3 and Dec 7).

Once you selected a topic, enter your topic in the sign-up sheet (see Brightspace -> assignment -> Sign-up sheet for End-of-Term Presentation). Make sure you're your topic has not been selected already. The sign-up sheet will be available after the last drop date on Oct 7th 2026.

The presentation is considered an essential core component of the class. Students must present to avoid getting an N.

- **Escape room** 4%, done in class on Nov 26 2026. There is no deferred option for the escape room. If you miss the escape room for valid reason communicated to the course coordinator (B. Ehlting) via email, the final exam will be worth 44%.
- **Final exam:** 40%, cumulative, invigilated in person during final exam period. The final exam offers 1.5X to everyone in the class (universal extended design). You must write the final exam to complete this course. If you miss the final exam apply for RAC and contact the course coordinator B. Ehlting via email immediately to arrange for deferred final exam date and location.
- **Missing or late assignments** without valid excuse will receive 0%. If you have a valid reason for being unable to submit your work on time, please contact the course coordinator B. Ehlting ASAP via email. Alternative forms of assessment and / or deadlines will be discussed with the instructor.
- Students with **accommodations** are encouraged to reach out to the course coordinator B. Ehlting via email to discuss options ASAP and no later than four weeks before the assignment/final exam.

To pass this course, students must

1. Submit a minimum of ten small case studies (out of 20)
2. Submit a minimum of two large case studies (out of 4)
3. Present a topic of their choice at the end of term
4. Write the final exam

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

failing grade, and it factors into a student's GPA as 0. The maximum percentage that can accompany an N on a student's transcript is 49, even if the calculation results in a grade higher than 49%. *If a student successfully completes 1 through 4, but the overall grade is 49% or lower, they will receive an "F" on their transcript.*

The use of artificial intelligence (AI) and academic integrity:

- Acceptable use of AI:

AI can be very useful when students use it as a study tool: it is ok to write your own summary and ask AI to provide exam questions. It is NOT ok to copy and paste lecture slide content directly to AI because this would violate copy right.

- Nonacceptable use of AI:

The **use of any form of AI during invigilated quizzes/exams and other assessments** is unethical and considered a violation of academic integrity unless the instructor has specifically given permission. **Recording quiz/exam/assignment questions and sharing with peers who missed the evaluation and must defer is a violation of academic integrity.**

Remember that you are at UVic and pay tuition to learn and to train to become a professional with profound background knowledge and who should be able solve future problems in our society. You are here to learn how to think.

Consider the environmental impact due to massive energy consumption every time AI is used.

Grade conversion:

A+ 90-100%; A 85-89.5%; A- 80-84.5%; B+ 77-79.5%; B 73-76.5%; B- 70-72.5%;
C+ 65-69.5%; C 60-64.5%; D 50-59.5%; F <49.5%

In determining final grades for the course, we will round your course score to the nearest whole percent. That is the official course grade that will be submitted for you.

We cannot change your grade for any reason, except if we have made an error calculating it. After the final exam has been written, there is no extra work that you can do to raise your grade.

How to be successful

Understanding the details of molecular applications is so much fun! This course is a success when you learn, understand and be happy. Making mistakes is a good way to learn and is never a failure.

Class attendance is expected: **attend lectures, listen, take (handwritten) notes and**

engage during discussion sessions with your peers. I strongly encourage you to ask if you have questions! Class time is our time together for asking/answering question.

Study time outside the classroom: It is very important to stay on top of class material and study for a few hours after each lecture. Write your own summaries, compare, and ask yourself 'what if' questions (e.g. What is the best method to identify individuals if the DNA is degraded?) Form **study groups** with your peers: 4-5 students is a good group size. Only once you can talk about the material you really understand it.

I want you to know that **off – task activities** like checking email, text messaging, checking social network sites, is **negatively affecting students' grades (your own and your peers next to you) by more than 10% (Sana et al. 2013, Computers and education 62, 24-31).** I strongly recommend that you turn off your off – task aps/programs during class time and study time to allow you to focus and not be distracted by social media and other non-course related sites!

Important Dates



In the UVic calendar you will find a fuller list of important dates, but the ones we have listed below are the ones that will matter to students in Biology 388.

Sept 9th 2026 First day of classes at UVic

Sept 10th: First lecture for biol388 at 10 am

Sept 22nd: Last day for 100% reduction of tuition fees

Sept 25th: Last day for adding courses that begin in the first term

Sept 30th: National Day for Truth and Reconciliation, UVic closed, no lecture
Last day for paying first term fees without penalty

Oct 12th: UVic closed (Thanksgiving), no lecture

Oct 13th Last day for 50% reduction of tuition fees for standard courses

Oct 26 – Oct 30: 5 Days of Action: 365 days of Commitment, various activities over entire week on campus

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

Nov 9-11: Reading break, no classes

Nov 26: Digital Escape Room, in class

Nov 30 – Dec 7: Student end-of-term presentations

Dec 7th: Last day of classes

Dec 10-23rd: Exam period

Stay healthy!

A note to remind you to 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.

Avoid last minute study panic by working regularly throughout the term: This will help you achieve your goals and cope with stress.

General regulations:

We cannot change your grade for any reason, except if we have made an error calculating it. There is no extra work that you can do to raise your grade.

Failure to complete essential components of this course (minimum 50% of small and large case studies, student presentation and final exam) will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. N is a failing grade and factors into GPA as a value of 0.

Please read the appropriate section of the current UVic Academic Calendar regarding your rights and obligations.

<https://www.uvic.ca/calendar/future/undergrad/index.php#/policies?expanded=Undergraduate%20Academic%20Regulations>

You are expected to **observe UVic academic regulations and standards of scholarly integrity** especially with regards to plagiarism and cheating. Please check out this link:

<https://www.uvic.ca/library/help/citation/plagiarism/>

Student conduct

The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the university community have the right to this experience and the responsibility to help create such an environment. The University will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment.

Please be advised that this includes logging into UVic’s learning systems or interacting with online resources, and course-related communication platforms, you are engaging in a university activity.

All interactions within this environment are subject to the university expectations and policies. Any concerns about student conduct may be reviewed and responded to in accordance with the appropriate university policy.

To report concerns about online student conduct: onlineconduct@uvic.ca

Concerns about conduct in lectures and labs should be brought to your instructor.

I hope that you are enjoying a great term with Applied Molecular Biology!

UVic support centers:

Centre for Accessible Learning (CAL): promote educational accessibility for students with disabilities and chronic health conditions. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

<https://www.uvic.ca/accessible-learning/index.php>

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. Due to covid19 service is now offered by phone

<https://www.uvic.ca/services/counselling/>

Computer help desk if you have any **technical issues** using Brightspace
(helpdesk@uvic.ca)

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, staff, faculty and administration in Indigenous ways of knowing and being.

<https://www.uvic.ca/services/indigenous/students/programming/elders/index.php>

Health Services - University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives. UVic Health has transitioned to offering services almost entirely by telehealth

<http://www.uvic.ca/services/health/>

Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being. Supporting Indigenous students.

<https://www.uvic.ca/services/indigenous/>

Office of Student life: student conduct, first year experience, Student mental health, Sexualized violence awareness,... : <https://www.uvic.ca/services/studentlife/index.php>

Sexualized Violence Prevention and support: how to start conversations about consent, support on and off campus

<https://www.uvic.ca/sexualizedviolence/>

Student support services: the office of registrar helps with academic concession, fee reduction appeals, room bookings,... <https://www.uvic.ca/registrar/students/index.php>

Student Wellness Centre to support students' mental, physical and spiritual health by a team of counsellors, nurses, physicians, spiritual care providers.

<https://www.uvic.ca/student-wellness/index.php>

Support Connect: offers short term solution focused counselling, available 24/7 help by phone or online. Supported by counsellors, consultants and life coaches.

<https://www.uvic.ca/student-wellness/wellness-resources/supportconnect/index.php>

UVic Bounce: Stories about resilience and how we stand up again after falling.

<https://uvicbounce.ca/>