Close All Sections

General Course Information

BIOL 102: Fundamentals of Biology: Molecules to Cells

BIOL 102 is an introduction to the basic themes and concepts of modern biology spanning organizational levels from molecules to cells in an evolutionary context.

Credits: 3.0

Pre-requisites: None. Recommended 4U Biology and Chemistry, or equivalent high school background

Lecture/Lab Times and Locations: See Solus

Course Format:

Lecture content will be delivered via a hybrid approach. A series of pre-recorded videos will be posted to the onQ site for your viewing. The pre-recorded lectures will cover most of the core content of the course, and they should be watched prior to attending the in-person lectures. The in-person lectures will review and expand upon the pre-recorded content, will be used to provide value-added material, and will provide opportunities to test your knowledge through practice questions.

Labs will include a combination of online individual activities and in person group activities. The labs are designed to help you better understand the course content and will give you the opportunity to apply what you've learned.

Quizzes will be administered through onQ, while *exams* will be administered in-person.

Student hours will be held in-person and/or over Zoom to provide students many opportunities to interact with the professors.

Course Outline:

Course content is divided into three sections, with each section comprised of units/chapters that build upon concepts as we progress through the hierarchy of organization in living systems.

Section 1: Introduction and Basic Biological Chemistry

Presents an introduction to biology as a scientific discipline, emphasizes the importance of the experimental method for hypothesis testing, and explores the structure and function of the main classes of molecules found in biological systems. Potential details are as follows:

- An Introduction to Biology: exploration and overview of biology as a natural science, hypothesis testing, the experimental method, evidenced-based development of theory.
  - **Lab 1**: Science and Communication - Ways of Knowing
- Biological Chemistry: review of basic atomic and molecular structure, importance and chemistry of water in biological systems, biological chemistry of carbon, structure/function of biological macromolecules: lipids, carbohydrates, nucleic acids, and proteins.

Section 2: Fundamental Cell Biology

Presents an overview of the organization and structure/function relationship of the main components of prokaryotic and eukaryotic cells. This section also explores primary metabolism, enzymology, and the basic principles of photosynthesis. In addition, the mechanisms of intra- and intercellular communication are also studied in this section. Potential details are as follows:

- Cell Structure and Organization: overview of cell ultrastructure, comparisons of prokaryotic and eukaryotic cells, organelle structure/function, genome and proteome function.
- Structure/Function of Biological Membranes: membrane composition including membrane protein structure/function, transport across membranes (including exploration of tonicity, diffusion, osmosis, active vs passive transport, endo- and exocytosis), environmental impact on structure/function of membranes.
- Enzymology and Metabolism: energy, chemical reactions, enzyme structure/function, primary metabolism and cellular respiration (glycolysis, citric acid cycle, electron transport), anaerobic respiration and fermentation, introduction to secondary metabolism.
  - **Lab 2**: Metabolism - Ethanol
- Photosynthesis: chloroplast structure/function, light reactions, Calvin cycle, variations on photosynthesis (C3, C4, CAM reactions), environmental aspects of photosynthesis.
- Cell Communication: fundamental concepts in information processing by cells, cell receptors, general properties of signal transduction pathways, basic concepts of hormone signalling, apoptosis.

Section 3: Molecular and Classical Genetics

Examines how DNA functions as the heritable blueprint of the cell. Topics range from the regulation of gene expression and cell division to the molecular mechanisms of inheritance and the application of molecular genetics to biotechnology. Potential details are as follows:

- DNA Structure: structure of nucleotides, DNA strands, and the DNA double helix, replication of DNA, telomere structure and function.
- Gene Expression at the Molecular Level: gene categories, encoding polypeptides, central dogma of genetics, polypeptides determine phenotypes, transcription, types of RNA, the genetic code, ribosomes, translation.

- **Lab 3**: Bioinformatics - Your Favourite Gene

- Gene Regulation: benefits of gene regulation, transcription factors, lac operon, negative and positive control, trp operon, eukaryotic transcription, combinatorial control, core promoter, transcription factors, DNA methylation, regulation of RNA processing and translation.
- Mutation and Cell Cycle Regulation: mutation, DNA repair, cell cycle, checkpoint control, cancer, oncogenes, tumour-suppressor genes.
- Chromosomes and Cell Division: Eukaryotic chromosome structure and function, DNA associated proteins, effects of chromosome condensation, mitotic cell cycle, karyotyping, phases of meiosis, synapsis.
- Inheritance and Phenotype Determination: Mendel's laws of inheritance, dominance and recessiveness, genotype and phenotype, gene linkage, molecular basis of phenotypic ratios, gene product interactions, organelle genomes, epigenetic effects.
- Developmental Genetics: Mutational analysis of animal development, homeotic genes.
- Genetic Technology: Gene cloning, gene vectors, genomic and complementary DNA libraries, gel electrophoresis of DNA, polymerase chain reaction (PCR), genomics, proteomics, 2-dimensional electrophoresis of proteins, DNA sequencing, biotechnology and its applications, transgenic organisms, bioremediation, cloning of mammals, DNA fingerprinting, gene therapy in medicine.
  - **Lab 4**: Biotechnology - Biotech Challenge

Important University Dates

Key dates (first day of class, tuition due date, last day to add/drop courses) are important to your academic success. Please find them at Important Dates and Sessional Dates

If you enroll in the course late:

If you enroll in BIOL102 *after* the first day of class, as soon as possible you should:

- Refer to the Timeline to see what activities are running and what information you need to know
- Read the information on the Week 1 Lecture Overview page.
- If you enroll after the Wednesday of Week 2 and are unable to complete the Pre-Lab #1 online activity before the end of the grace period, which ends the following Sunday at 11:59pm, email biol102@queensu.ca. Your email subject line should be "Enrolled after the Wednesday of Week 2".
- Likewise, if you enroll after the Wednesday of Week 2 and are unable to complete Lecture Quiz #1 before the end of the grace period, which ends the following Tuesday at 11:59 PM, email biol102@queensu.ca. Your email subject line should be "Enrolled after the Wednesday of Week 2".
- If you enroll after your first scheduled in person lab section in Week 2, email biol102@queensu.ca. Your email subject line should be "Enrolled after my scheduled Lab 1".

Welcome Message

Welcome to BIOL 102, and for most of you, to your first term at Queen's University! We look forward to spending the term together as we discuss the fundamentals of Molecular and Cellular Biology. BIOL 102 will serve as your introduction to university biology and will prepare you for upper level biology and biochemistry courses that you may take in the future. We hope that through this course, you will learn not only the basics of molecular and cellular biology, but also how to think like a scientist and apply your knowledge. For many of you,

high school biology likely consisted of a lot of memorization. While it is important to know biological facts, being a biologist requires you to apply your knowledge to new situations to solve problems. As such, this course (including assessments) will have an emphasis on applying your knowledge rather than rote memorization.

Material is presented through online lectures, in-person lectures, independent online exercises, group-learning sessions ("labs"), and possibly guest lectures. As such, BIOL 102 is a blended learning course - also known as active learning. For more about active learning, see: https://www.queensu.ca/ctl/resources/instructional-strategies/active-learning

We look forward to seeing you in the lectures and labs!

Equity, Diversity, and Inclusivity Statement

Queen's University recognizes that the values of equity and diversity are vital to and in harmony with its educational mission and standards of excellence. It acknowledges that direct, indirect and systemic discrimination exists within our institutional structures, policies and practices and in our community. These take many forms and work to differentially advantage and disadvantage persons across social identities such as race, ethnicity, disability, gender identity, sexual orientation, faith and socioeconomic status, among other examples.

Land Acknowledgements

Queen’s University is situated on traditional Anishinaabe and Haudenosaunee Territory. To acknowledge this traditional territory is to recognize its longer history, one predating the establishment of the earliest European colonies. It is also to acknowledge this territory’s significance for the Indigenous peoples who lived, and continue to live, upon it – people whose practices and spiritualities were tied to the land and continue to develop in relationship to the territory and its other inhabitants today. The Kingston Indigenous community continues to

reflect the area's Anishinaabek and Haudenosaunee roots. There is also a significant Métis community and there are First Peoples from other Nations across Turtle Island present here today.

We encourage you to learn about the history of these lands.

https://www.queensu.ca/encyclopedia/t/traditional-territories

https://www.queensu.ca/indigenous/ways-knowing/land-acknowledgement

Expectations

As your instructors, you can expect:

- us to come to lecture prepared
- us to be open to feedback on the course
- us to be available to answer questions, and to reply to inquires in a timely manner when submitted in the proper fashion
- respectful communication and interaction during all in-person and online communications
- a positive attitude

From you, as students, we expect:

- you come ready to learn and engage with the material
- your attendance and attention at lectures
- your on-time attendance and participation in your scheduled lab sessions (assigned in Solus)
- on-time submission of activities (see "Submitting Properly and On-Time", below)
- that you will uphold the values of academic integrity, meaning you will complete individual assignments individually and without accessing unauthorized websites (e.g., ChatGPT, Chegg, Course Hero, etc.).

- respectful communication and interactions with peers and members of the teaching team (see the "Netiquette and Discussion Statement", below)

Submitting Assessments Properly and On-Time

Any assessment that is not submitted to the proper submission site by the due date (or the end of the grace period, if there is one), will not be accepted, and the corresponding grade will be zero. To avoid this:

- Don't wait until the last minute, as technical delays may prevent your submission from going through. Submissions received even 1 minute past the deadline cannot be accepted.
- Make sure you submit the proper file, in the proper format, to the proper folder. If you've submitted the wrong file, or a file in a format other than what was required (including corrupted files), or if you submitted to the wrong folder, we cannot accept your submission. We'll only mark the most recent submission in a folder, so if you notice you've made a mistake, just re-submit (as long as it's before the deadline).
- **Lab group assignments**
  - As labs involve working with the same group all term, you may only attend your scheduled lab section (as assigned in Solus), and may only be credited for assignment submission if you've fully contributed to the assignment with your group in the lab.
  - If you arrive more than 15 minutes late, you will not be permitted to join the activity and will receive a score of zero for that lab. If you arrive late, but less than 15 minutes late, you will be admitted but will receive a deduction for any portion of the assignment you missed.
  - You'll submit your assignment as a group. It is the responsibility of all group members to ensure proper, on-time submission. Be sure to double-check that your designated group member has submitted your assignment properly.

- When writing online quizzes, be sure you don't submit until you are ready. Once you select and confirm the "submit quiz" option, your submission is final, and we will grade the questions you have completed. For Lecture Quizzes, please keep in mind that we will drop your lowest quiz grade.

Netiquette and Discussion Statement

University is a place to share, question, and challenge ideas.Each student brings a different set of lived experiences. You can help to create a safe, respectful place for each other by promoting the followingguidelines:

1. Make a personal commitment to learn about, understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on other people's lives and make sure your writing is respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers write before you respond. Think through and re-read your writings before you post or send them to others.
6. It’s alright to disagree with ideas, but do not make personal attacks.
7. Be open to being challenged or confronted on your ideas and challenge others with the intent of facilitating growth. Do not demean or embarrass others.
8. Encourage others to develop and share their ideas.

Course Learning Outcomes

Upon successful completion of this course, you should be able to:

1. Explain how the biochemistry of molecules influences how they function in

cells, and apply these principles to novel scenarios.

2. Describe the parts of a cell and how they work on their own and in conjunction with other components to carry out complex cellular processes.
3. Understand how cells use reactions and metabolic pathways to produce ATP, sugars, and other compounds, and the roles of thermodynamics and enzymes in regulating metabolism.
4. Explain the similarities and differences between cellular respiration, fermentation and photosynthesis, considering the nature of the pathways, their roles in cells and how they are regulated.
5. Describe and distinguish between DNA, chromatin, genes, chromosomes and genomes, explaining how various features influence their structure, expression, and regulation; how they change with mitosis and meiosis; and how they vary over evolutionary time.
6. Understand how cells regulate genes to make mRNA and protein, identifying critical steps in the regulation of the processes of transcription and translation.
7. Describe the basic tools in cell biology and genetics and how they are used in biotechnology.

Course Materials

An access code for Mastering Biology is **required**. Purchase of the electronic or hard copy Campbell Biology textbook is also **required** (buying the hard copy is **optional** if you purchase the electronic copy). The textbook is the same textbook used in BIOL 103.:

- The textbook for this course is: Campbell Biology, 3rd Canadian Edition, by Urry et al, 2020, published by Pearson. This textbook is required for both BIOL 102 and BIOL 103.
- You can purchase your electronic textbook (eText) and Mastering Biology access

code through the Queen's Campus Bookstore. You can purchase access to Mastering Biology with or without the eText via the following permalink: https://www.campusebookstore.com/link/?id=c03ed279-55d4-49ca-b45f-919faeaed675. When you click on the link, you will be taken to a shopping cart that is preloaded with two items: the required access code with the eText, and the required access code without the eText. Remove the item that you don't want (e.g., if you want the eText, remove the $60.95 option from the cart), then click "Checkout"; agree to the terms; and complete your purchase to receive your access code immediately. If you accidentally purchase both access codes, you can contact the Campus Bookstore for a refund.

- If you purchase a used textbook, it is necessary to also purchase an access code for Mastering Biology (with or without the e-text) from Pearson; the cost to purchase an access code without the eText directly from Pearson is $49. Mastering Biology comes included when a new eText is purchased through the Campus Bookstore and therefore does **NOT** need to be purchased separately.
- If you purchase the eText and access code, after registering for the course on the Mastering Biology site, it is possible to also purchase a looseleaf copy of the text book for $65 if desired; it is **not required**.
- To register for Pearson's Mastering Biology and to find answers to common questions about textbook registration, refer to the Textbook Registration slideshow and the DSMs Troubleshooting Guide.
- Your BIOL 102 instructors do not have the ability to assist you with technical difficulties related to Pearson/Mastering Biology. We recommend that you connect with the Pearson 24/7 tech support if you are having technical difficulties. Be sure to tell the support staff immediately that you are using Mastering integrated with Brightspace D2L so they can assist you appropriately.

- Lab material (case studies, relevant reading, etc.) will be available in OnQ as needed.
- An Internet-connected device is required to access all lectures and labs.

Suggested Time Commitment

In this course, you should expect to invest on average 10 hours per week. This will include the time you spend in class and lab, studying course material, and completing online activities and assessments. You are encouraged to use a term at a glance and a weekly study schedule (visit Student Academic Success Services) that distributes these per week and avoid 'cramming'. This way you will be more likely to complete the course successfully and remember what you learned longer.

The table below provides an estimate of hours of study. Keep in mind that time commitment will vary among students depending upon individual aptitude, level of background, etc.

Teaching Method	**Avg Weekly Hours**	**Number of Weeks**	**Total Hours**
In-person lectures	2	12	24
Group learning	1.5	5	7.5
Online activities	2-4 (avg 2.5)	12	30
Private study	3-7 (avg 5)	12	60
		TOTAL	110-130

Timing of Final Examination

The exam dates for each Term are listed on the Faculty of Arts and Science webpage under Important Dates. Student exam schedules for the Fall Term are posted via SOLUS immediately prior to the Thanksgiving holiday. **Students should delay finalizing any travel plans until after the examination schedule has been posted. Exams will not be moved or deferred to accommodate employment, travel/holiday plans, or flight reservations.**

Assessment

Component	Weight
Dynamic Study Modules (DSMs)	8% (21 x ~0.38%)
Lecture quizzes †	25% (5 x 5%)
Online lab activities *	15% (5 x 3%)
In person lab activities	17% (4 x 4%; 1 x 1%)
Final exam	35% (1 x 35%)

† There will be six (6) lecture quizzes throughout the term, and your lowest quiz grade will be dropped.
* Includes the Stuff You Should Know activity.

Description of Assessments

Dynamic Study Modules (DSMs)

DSMs are online quizzes, accessed through the Pearson site, that are meant as low-stakes and low-stress learning opportunities. There is one DSM per chapter, giving a total of 21 DSMs throughout the term. You can take as long as you need to complete each DSM. The grade associated with the DSMs essentially amounts to a participation grade. Each DSM consists of a set of multiple choice questions. If a question is answered incorrectly, you will be given the correct answer together with an explanation of why the answer is the correct answer. Later in the same DSM, you will be presented the same question and asked to answer it. You will keep getting a question until you have answered correctly. A DSM is considered complete once all questions are answered correctly. You will receive full marks for a DSM once it is completed, regardless of the number of attempts. Marks are only allocated to completed DSMs; DSMs that are partially completed are not awarded partial marks. All DSMs will be available from the beginning of the term, and will be due in batches throughout the term as indicated on the Timeline page. There is a 3-day grace period following the due date.

Lecture Quizzes

There will be six (6) online quizzes associated with the lecture material throughout the term. Each quiz will open at 12:01 AM on a Thursday and close two days later at 11:59 PM on a Saturday. There is a 3-day grace period following the due date. The length of the quizzes may vary, but for each quiz, students will be given at least double the amount of time that the quiz is designed to take for most students. These are individual activities, meaning you should work on them alone and should not discuss them with other students. Each quiz will be based on lecture material (including both the pre-recorded and in-person lectures), and it is expected that you should be able to answer the questions based on the content provided in lecture. Questions are not expected to be based on material presented solely in the textbook and not covered in lecture. These quizzes will consist mainly of multiple choice questions, and may also include true/false questions, multiple select questions, and very short answer questions, among other similar question types. These quizzes will consist predominately of applied questions instead of knowledge-based questions. This means that you will need to understand the concepts presented in lecture and be able to apply your knowledge to new situations, instead of merely memorize everything. Each student's lowest grade will be dropped. In other words, only your five (5) best quizzes will count towards your grade.

Lab Activities

Stuff You Should Know

This online activity provides information about course and university policies and procedures, and about resources and opportunities that are available to undergraduate students. It is available from the beginning of Week 1 until the end of Week 3. The quiz is untimed and can be completed at any point during this 3-week window. This is an individual activity, meaning you should complete the quiz alone. If you need assistance, you may post your questions on the Lab Questions forum.

Material from the "Academic Integrity" portion of this activity will be on the final exam.

Labs #1-4

The labs are 2-week blended activities, consisting of an individual online pre-lab component in the first week, followed by an in person group component in the second week.

Online Pre-Lab Activities/Quizzes. The pre-lab activity is designed to prepare you for the group component the following week. Each pre-lab opens Monday at 12:01am and the quiz is due by Thursday at 11:59pm. There is a 3-day grace period following the due date. These are un-timed activities that we estimate shouldn't take you more than 2 hours to complete, but you can take longer if you'd like. These are individual activities, meaning you should work on them alone and should not discuss them with anyone prior to the assessment answer release date. If you need assistance, you may post your questions on the Lab Questions forum.

In Person Lab Activities/Assignments. You must attend your regularly scheduled lab slot in person to participate in the activity and assignment. Assignments are due at the end of the 1.5 hour lab, but there is a 1 hour grace period after that for assignments that need to be uploaded to onQ (in case of technical difficulties). As these are group activities, you will work on them with your group and submit a single group assignment. Students who do not contribute fully to the group effort will receive partial or no grades, based on your TA/instructor's discretion. Please refer to the Queen's Student Academic Success Services (SASS) group work resource: https://sass.queensu.ca/group-work/ for tips and other information related to group work.

There is an additional lab activity worth 1% associated with the Biotechnology Practice Lab (more details provided during that lab).

Final Exam

There will be one (1) exam for this course, which is the final exam that will be held during the December exam period. It will be an in-person exam. The final exam will consist mostly of multiple choice questions, but may also include true/false questions and multiple select questions, among other similar question

types. The final exam will be based on all lecture material provided during the course (i.e., all lecture content provided in Weeks 1 to 12). The exam is expected to contain a mix of knowledge-based questions and applied questions.

Essential Requirements and Flexibility to Succeed

To pass this course, you must achieve a final course grade of at least 50% overall.

Most assessment items in the course have some flexibility built into their design:

Dynamic Study Modules (DSMs)

All DSMs will be available from the start of term and will be due in batches throughout the term. The DSMs can be done anytime prior to the deadline. A three-day (72-hour) grace period will be provided for all DSM deadlines. These assessments are un-timed, meaning you can take as long as you'd like to complete them, as long as you complete and submit them by the end of the grace period.

Lecture Quizzes

Each quiz will be available for a 3-day window plus a 3-day (72 hour) grace period. The length of the quizzes may vary, but for each quiz, students will be given at least double the amount of time that the quiz is designed to take for most students. Your lowest grade will be dropped, so only your five (5) best quizzes will count towards your grade.

Lab Quizzes

Stuff You Should Know

The quiz for this activity is untimed and will be available from Weeks 1-3, plus a 3-day (72 hour) grace period.

Pre-Lab Quizzes

Each activity/quiz will be available for a 4-day window plus a 3-day (72 hour) grace period. These assessments are un-timed, meaning you can take as long as you'd like to complete them, as long as you submit them by the end of the grace period.

Lab Assignments

Lab assignments are due at the end of your assigned 1.5 hour session, but there is a 1 hour grace period after that for assignments that need to be uploaded to onQ (in case of technical difficulties).

Some information about due dates and grace periods:

A **due date** is when an assessment is due, after which it is considered late.

A **grace period** is a period of time after the due date where the late assessment does not have a late penalty (this will sometimes appear as an "end date" in onQ, after which the activity - e.g. a quiz - will no longer be available). Submitting a late assessment within the grace period is on your honour that you are experiencing extenuating circumstances, so documentation is not required. This is universal design and is offered in good faith. Grace periods vary by assessment. If a grace period is not explicitly stated, then there is no grace period.

No submissions will be accepted after the grace period, or for assessments without a grace period, after the due date. These submissions will receive a grade of zero.

(Clue for Quest#4)

Grading Scheme and Regrade Requests

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen’s Official Grade Conversion Scale:

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

Regrade Requests

Please note: Only regrade requests that are made following these procedures will be considered.

Lecture Quizzes

If you think there is a mistake with the wording of the quiz or in the way it was graded, please make a post in the appropriate thread on the Lecture Questions Forum. In your post, please clearly explain why you believe there is a mistake.

Quizzes, Exams, DSMs

If you are missing a grade for work you submitted, within one week of the grades being released, send a regrade request to biol102@queensu.ca. Regrade requests must include:

- in the subject line of your email:

- indicate that you're making a regrade request, and state the name of the quiz/exam/DSM in question (e.g. Regrade Request: Lecture Quiz 2)

- a clear explanation why the work deserves a grade different than assigned

Lab Assignments

If you believe there has been an error in the way one of your lab assignments was marked:

First, within one week of the assignment grades being released, discuss the marking with your TA (emails are listed on the Teaching Team page).

Then, if you are unable to resolve the situation, send a regrade request to biol102@queensu.ca. Requests must be received within one week of receiving the final correspondence from your TA regarding the assignment and include:

- in the subject line of your email:
  - indicate that you're making a regrade request, and state the name of the assignment in question (e.g. Regrade Request: Lab 2)

- in the body of your email, include:
  - your lab section number and group lab number
  - a clear explanation why the work deserves a different grade than assigned
  - the reason(s) why discussions with your TA did not resolve the situation
  - whether your group members would like to be part of this regrade request (please ask them first)

- also include:
  - the assignment as an attached document, along with all feedback from your TA
  - your email exchanges with your TA; copy+paste all of the relevant emails, in chronological order, into a single attached document and/or provide a written summary of any verbal conversations

If we approve your request for a regrade, another member of the teaching team will then review your submission. It's important to note that we may reassess the entire activity/assignment (not just the portion specified in your request) and the new grade will stand, even if it is lower than the original. Regrade requests may not be processed until the end of term.

Questions about the Course and Contacting the Teaching Team

Please refer to the "Questions?" widget on the course home page.

You should be able to find the answers to most of your questions about the course in this **Syllabus** or in the **Timeline**, or by using the **Student Information Tool**. However, if you're unable to find the answer you're looking for though those means, you can post a question on the **Administrative Questions Forum**.

Please understand that, in a course this size, the instructors are unable to respond to emails. If you have a question relating to a personal matter, please use the course email address provided, which is monitored by our administration assistant. Emails to the instructors' personal work emails will not be answered.

The best way to get answers to your questions about lecture content is to attend your professor's **student hours**. You may also post questions on the **Lecture Questions Forum**. The profs may be able to answer a question or two after some of the lectures as well.

If you have questions about the labs you can ask your TA during your lab session or post a question on the **Lab Questions Forum**. We provide your TA's email address on the Teaching Team page, however please email your TA only if it relates to concerns you may have about how your lab assignment was graded.

Please use only your Queen's email account for any email communication. Any communications sent out by us will be to this account only, so please check it regularly.

(Clue for Quest #3)

Course Announcements

Any changes to the course or any other form of announcements are made via the Announcements tool on the course homepage. We strongly encourage you to sign up to automatically receive a notice that a new announcement has been posted: instructions to Set up Your Email/SMS Notifications .

Course Feedback

At various points during the course, we may ask you to take part in a variety of feedback activities, such as surveys, questionnaires and exit tickets.

This feedback enables us to make any adjustments necessary to improve your learning environment. Additional feedback will be sought throughout the course. All surveys are anonymous, and directly related to activities, assessments, and other course material.

Accommodations for Disabilities

Queen's University is committed to achieving full accessibility for people with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all their academic activities.

If you are a student with a disability and think you may need academic accommodations, you are strongly encouraged to contact the **Queen's Student Accessibility Services (QSAS)** and register as early as possible; see also the "QSAS Accommodations (Ventus)" button on the course homepage. For more information, including important deadlines, please visit the QSAS website.

Most assessment items in the course have academic accommodations already build into their design; please see the "Essential Requirements and Flexibility to Succeed" section in this Syllabus. However, if you require accommodations above and beyond what is already built in, please see the following.

Note that you must be eligible for (and must have selected in Ventus) the relevant accommodation for it to be applied in BIOL102, i.e.:

- extension request: "Up to 7-calendar day extension on assignments"
- missed quiz/exam: "Condition may result in sudden unplanned absence from exam"
- missed lab: "Alternative evaluation in lieu of participation/attendance marks"; "Alternative methods of participation"; "Occasional absences from class"
- alternate to group lab activities: any of the Assessment Accommodations (e.g. extra time) that cannot be met due to the lab format; "Frequent breaks"; "May arrive late to or leave early from class"; "Option to complete group work individually"

Dynamic Study Modules (DSMs)

If you cannot submit the DSMs by the due date due to reasons related to your disability, email biol102@queensu.ca before the due date to request up to a 7-day extension.

Lecture Quizzes

Twice the amount of required time is already provided for these assessments, therefore no additional individual time accommodations will be applied unless your accommodations letter indicates you require more than double time. This approach complies with university/provincial laws and guidelines around accommodation.

If you cannot write a lecture quiz prior to the end of the grace period due to

reasons related to your disability, email biol102@queensu.ca before the end of the grace period and you will be exempted from the quiz. The grade associated with the quiz will be redistributed to the remaining quizzes (i.e., instead of your best 5 of 6 quizzes each being worth 5%, your best 4 of 5 quizzes will each be worth 6.25%); if you are exempted from more than 2 quizzes, the missed grades associated with the missed quizzes may instead be transferred to the final exam. No extensions can be provided. You can be exempted from a maximum of two lecture quizzes across the term, and exemptions will not be granted retroactively once you write the quiz.

Lab Quizzes

Stuff You Should Know

If you cannot complete the quiz on time due to reasons related to your disability, email biol102@queensu.ca before the end of the grace period to request up to a 7-day extension.

Pre-lab Quizzes

If you cannot write a pre-lab quiz due to reasons related to your disability, email biol102@queensu.ca before the end of the grace period. Your quiz grade will be pro-rated based on your in person lab assignment grade.

Lab Assignments

As these are group-based activities/assessments, it is not possible to have individual accommodations for time. If you feel unable to participate in the labs given this structure, you may complete individual lab assignments instead. Email biol102@queensu.ca to make arrangements.

If you are unable to attend your assigned session for reasons related to your disability, email biol102@queensu.ca before the end of the day of your assigned lab. You will be eligible to complete a written make-up lab assignment during Week 6 (for Labs 1 and 2) or Week 12 (for Labs 3 and 4).

Biotech Practice Lab Activity

If you are unable to attend the Biotech Practice Lab, email biol102@queensu.ca before the end of the day of your assigned lab and your grade for the activity will be pro-rated based on your Lab 4 assignment.

Final exam:

Accommodations will be applied on an individual basis for students who have registered their accommodation for this course at least 2 weeks in advance of the exam.

If you cannot write an exam due to reasons related to your disability, email biol102@queensu.ca as soon as possible and you will be eligible to write a make-up exam, on a date to be determined.

Academic Consideration for Students in Extenuating Circumstances

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Academic consideration is a process for the university community to provide a compassionate response to assist students experiencing unforeseen, short-term extenuating circumstances that may impact or impede a student's ability to complete their academics. This may include but is not limited to:

- Short-term physical or mental health issues (e.g., stomach flu, short-term anxiety or depression, concussion, surgery, medication, vaccination)
  - For information about COVID, please refer to the Illness Absence Reference Guide.
- Responses to traumatic events (e.g., death or serious illness of a loved one, divorce, sexual assault, social injustice)
- Requirements by law or public health authorities (e.g., court date, unexpected non-travel-related requirements to isolate)
- Significant event (e.g., varsity athletic event, distinguished event, serving in the reserve forces)

Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances. For more information, please see the Senate Policy on Academic Consideration for Students in Extenuating Circumstances.

How to Apply for Academic Consideration

Each Faculty has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances. Arts and Science undergraduate students can find the Faculty of Arts and Science protocol and the portal where a request can be submitted. Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

For guidance on submitting requests, please refer to the information available on the Academic Consideration website under "Applying for Academic Consideration."

If you need to request academic consideration for this course, you will be required to provide the following name and email address to ensure it reaches our team accordingly:

- Instructor/Course Coordinator email address: biol102@queensu.ca

We can only offer Considerations to students who submit their academic consideration requests following this method. Please donot contact your instructors or TAs, as all requests must go through the Faculty of Arts and Science office.

Students are encouraged to submit requests as soon as the need becomes apparent, as any delay in doing so may limit the Consideration options available.

Options Available in BIOL 102 for Students with Approved Academic

Consideration

For students with approved academic consideration, we can offer the following:

Dynamic Study Modules (DSMs)

If you experience extenuating circumstances that prevent you from submitting your DSMs on time, and have an approved academic consideration that spans the DSMs due date and grace period, please email biol102@queensu.ca prior to the end of the grace period to request up to a 7-day extension.

Lecture Quizzes

If you cannot complete a lecture quiz due to extenuating circumstances, and have an approved academic consideration that spans *both* the quiz availability window *and* the full grace period, you will be exempted from the quiz, and the grade associated with the quiz will be redistributed to the remaining quizzes (i.e., instead of your best 5 of 6 quizzes each being worth 5%, your best 4 of 5 quizzes will each be worth 6.25%); if you are exempted from more than 2 quizzes, the missed grades associated with the missed quizzes may instead be transferred to the final exam. We will automatically apply the exemption after we receive the confirmation email from Academic Considerations, so there is no need to email us. You can be exempted from a maximum of two lecture quizzes across the term, and exemptions will not be granted if you chose to still write the quiz.

Lab Quizzes

Stuff You Should Know

If you cannot complete the quiz on time due to extenuating circumstances, and have an approved academic consideration that spans the quiz due date and grace period, please email biol102@queensu.ca before the end of the grace period to request up to a 7-day extension.

Pre-lab Quizzes

If you cannot complete a pre-lab quiz due to extenuating circumstances, and have an approved academic consideration that spans *both* the quiz availability window *and* the grace period, your quiz grade will be pro-rated based on your in

person lab assignment grade. We will automatically pro-rate your grade after we receive the confirmation email from Academic Considerations and after we have determined your in person lab assignment grade, so there is no need to email us.

Lab Assignments

If you are unable to attend your assigned session and have an approved academic consideration for the day of the lab, you will automatically be eligible to complete a make-up lab. Make-up labs are online assignments that you can complete anytime during the 4-day window (Mon-Thurs of Week 6 for Labs 1 and 2; Week 12 for Labs 3 and 4). There is no need to email us; we will add your name to the make-up assignment folder and contact you by no later than the Monday of the week of the make-up labs with more information.

Biotech Practice Lab Activity

If you are unable to attend your assigned session and have an approved academic consideration for the day of the lab, your grade for the activity will be pro-rated based on your Lab 4 assignment.

Final exam:

If you cannot write the exam and have an approved academic consideration for the day of the exam, you will automatically be eligible to write a make-up exam, on a date to be determined in mid-January. There is no need to email the course; we'll contact you with more information.

Academic Integrity

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity.

Departures from academic integrity include (but are not limited to):

- plagiarism
- use of unauthorized materials

- facilitation
- forgery and falsification

Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

If you are unsure whether your work unintentionally violates academic integrity, please review the Student Academic Success Services (SASS) Academic Integrity module, see the Queen's Academic Integrity website, or check in with your course instructor or TA.

Note about generative AI tools: Using generative AI writing tools such as ChatGPT in your submitted work is not permitted in this class. This type of use constitutes a departure from academic integrity.

Copyright of Course Materials

Unless otherwise stated, the material on the course website is copyrighted and is for the sole use of students registered in BIOL102. The material on the website may be downloaded for a registered student's personal use but shall not be distributed or disseminated to anyone other than students registered in this course. Copying this material for distribution (e.g. uploading material to a commercial third-party website) can lead to a violation of Copyright law. Find out more about copyright here: http://library.queensu.ca/help-services/copyright-fair-dealing.

Technology Requirements and Turnitin Statement

Web Browsers

onQ performs best when using the most recent version of the web browsers, Chrome or Firefox. Safari and Edge are strongly discouraged as these web browsers are known to cause issues withonQ.

Internet Speed

While a wired Internet connection is encouraged, we recognize that most students rely on a wireless connection. Aminimum download speed of 10 Mbps and up to 20 Mbps for multimedia isrecommended. Click here for an Internet speed test.

Technical Support

For technology support ranging from setting up your device, issues with onQ to installing software, contact ITS SupportCentre.

Turnitin Statement

This course uses Turnitin, a third-party application that helps maintain standards of excellence in academic integrity. Normally, students will be required to submit their course assignments through onQ to Turnitin. In doing so, students' work will be included as source documents in the Turnitin reference database, where they will be used solely to detect plagiarism.

Turnitin is a suite of tools that provide instructors with information about the authenticity of submitted work and facilitates the process of grading. Turnitin compares submitted files against its extensive database of content and produces a similarity report and a similarity score for each assignment. A similarity score is the percentage of a document that is similar to content held within the database. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to select the authenticity of work as a part of a larger process.

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