Close All Sections

General Course Information

BIOL 102: Fundamentals of Biology: Molecules to Cells (Fall 2026)

Course Description: The essential biochemistry, genetics, cell biology, and metabolic pathways underlying the survival and success of all living organisms. Themes and case studies could range from the application of genetic engineering in biotechnology to the role of cellular dysregulation in inheritable diseases.

Units: 3.0

Course Components: Lecture, Laboratory

Mode of Instruction: In-Person

Lecture/Lab Times and Locations: See SOLUS

Course Email: biol102@queensu.ca

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.

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 topics are as follows:

- An Introduction to Biology: exploration and overview of biology as a natural science, hypothesis testing, the experimental method, evidence-based development of theory.
- 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 topics 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.
- 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 topics 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.
- 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.

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 Lab 1A online activity and quiz before the end of the grace period, 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 3, email biol102@queensu.ca to be eligible to complete the make-up lab assignment. Your email subject line should be "Enrolled after my scheduled Lab 1B".

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 inquiries 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 one minute past the deadline (due date or end date) cannot be accepted, and you will receive a

grade of zero.

- When writing online quizzes, be sure you do not 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.
- **Lab group assignments**
  - As labs involve working with the same group all term (once groups are set, no switching is allowed), you may only attend your scheduled lab section (as assigned in SOLUS) and will only be credited for assignment submission if you've 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.
  - Make sure you submit the proper file, in the proper format, to the proper folder. If you have 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. However, we will only mark the most recent submission in a folder, so if you notice you have made a mistake, that is okay; just resubmit the correct file (as long as it is before the deadline).
  - You will submit your assignment as a group. Double-check that your designated group member has submitted your assignment. It is the responsibility of all group members to ensure proper, on-time submission. If the assignment is not submitted properly and on time, the entire group will receive a grade of zero.
  - For more information about uploading assignments in onQ, refer to the onQ Support site: https://www.queensu.ca/onqsupport/assessment-students
  - Exception:
    - If you can provide proof that your group completed the lab assignment on time but did not submit it properly (e.g., you submitted it to the wrong folder) and therefore did not receive a grade, email biol102@queensu.ca within one week of the assignment grades being released to explain what happened. Depending on the nature of the error, we may:
      - allow you to submit the assignment immediately for grading
      - allow you to complete the make-up assignment instead
      - determine that your grade of zero will stand

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 following guidelines:

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 writing before you post or send it to others.
6. It is 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.

United Nations Sustainable Development Goals (SDGs)

https://www.undp.org/sustainable-development-goals

The BIOL102 lab experiment is aimed at identifying microbes that can be used to enhance crop growth while reducing reliance on chemical fertilizers. This course component contributes to the following United Nations Sustainable Development Goals (SDGs):

- Goal 2: Zero Hunger
  - Promotes sustainable agriculture by supporting environmentally responsible methods to enhance crop productivity.
- Goal 13: Climate Action
  - Investigates alternatives to chemical fertilizers, whose production and application contribute to greenhouse gas emissions. Sustainable microbial solutions may help reduce agriculture's environmental footprint.
- Goal 15: Life on Land
  - Supports soil health and ecosystem conservation by reducing dependence on synthetic fertilizers and promoting sustainable land management practices.

Course Materials

- An access code for MasteringBiology 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 for this course is: Campbell Biology, 4th Canadian Edition, by Urry et al, 2023, published by Pearson.
- You can purchase your electronic textbook (eText) and MasteringBiology access code through the Queen's Campus Bookstore. You can purchase access to MasteringBiology with or without the eText via the following permalink: **https://campusebookstore.com/link/?id=64f3ecd9-6942-4537-b30e-ee074b57f2fb**
- When you click on this 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 do not want (e.g., if you want the eText, remove the $74.99 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.
- The cost of the etext with MasteringBiology is $125.99, and the cost of only MasteringBiology without etext is $74.99 at the Queen's Campus Bookstore.
- If you purchase a used textbook, it is necessary to also purchase an access code for MasteringBiology (with or without the etext) from Pearson. MasteringBiology 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 MasteringBiology site, it is possible to also purchase a looseleaf copy of the textbook if desired; however, it is **not required**.
- To register for Pearson's MasteringBiology and to find answers to common questions about textbook registration, refer to the Instructions and the DSMs Troubleshooting Guide.
- Your BIOL 102 instructors do not have the ability to assist you with technical difficulties related to Pearson/MasteringBiology. 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.

- **You will need to bring a lab coat** to the experimental labs (Lab Module 2). You are not required to wear a lab coat for the other in-person sessions, but will need to wear closed-toe and closed-heel shoes to all labs.
- An Internet-connected device is required to access all lectures and labs. For the labs, you'll need to be able to access onQ and possibly other sites, work in Word/Excel, etc.

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 Midterm and Final Examinations

Midterm Exam:

The midterm exam for this course will take place in-person on Saturday, November 7, 2026. The exact time and locations on campus will be shared with the class in advance of this examination. It is expected that students will attend this exam as it is scheduled. **This midterm exam will not be rescheduled to accommodate employment, travel/holiday plans or flight reservations.**

Final Exam:

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

Assessment

Breakdown of Assessment Grades

Component	Due Date	Weighting (%)	Learning Outcome Assessed
Lab Quizzes *	.	*[12 total]*	.
Scavenger Hunt	.Oct 1	2	.
Academics 101	Oct 1	1	.
Biosafety	Oct 1	1	.
#1	Sep 17	2	#1-4
#2	Oct 1	2	#1-4
#3	Oct 29	2	#1-4
#4	Nov 19	2	#5-7
Lab Assignments	.	*[20 total]*	.
1B	.Sep 21-24 **	4	#1-4
2B	Oct 5-8	4	#1-4
2C	Oct 19-22	4	#1-4
3B	Nov 2-5	4	#1-4
4B	Nov 23-26	4	#5-7

<u>Lecture Quizzes</u> #1 #2 #3 #4	. Sep 25 Oct 23 Nov 13 Dec 4	*[20 total]* 5 5 5 5	#1-7
<u>Dynamic Study Modules</u> DSM 1 DSM 2 DSM 3 DSM 4 DSM 5 DSM 6 DSM 7 DSM 8 DSM 9 DSM 10 DSM 11 DSM 12 DSM 13 DSM 21 DSM 16 DSM 17 DSM 18 DSM 20 DSM 19 DSM 14 DSM 15	. Sep 26 Sep 26 Sep 26 Sep 26 Sep 26 Sep 26 Sep 26 Oct 10 Oct 10 Oct 10 Oct 10 Oct 31 Oct 31 Oct 31 Nov 14 Nov 14 Nov 28 Nov 28 Dec 5 Dec 5 Dec 5	*[8 total]* 0.381	#1-7

Exams	.	*[40 total]*	
Midterm Exam	.Nov 7	20	#1-7
Final	TBD	20	

* Includes the Stuff You Should Know activities.
** Lab assignments are due at the end of your assigned lab session.

More details can be found in the Timeline.

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 correct. Later in the same DSM, you will be presented with the same question and asked to answer it. You will continue to get 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 four (4) online quizzes associated with the lecture material throughout the term. Generally, each quiz will open at 12:01 AM on a Monday and close four days later at 11:59 PM on a Friday. 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, however, they may also include true/false questions, multiple-select questions, and very short answer questions, among other similar question types. These quizzes will consist predominantly 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 memorizing everything.

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 4. The quiz is untimed and can be completed at any point during this 4-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.

Lab Modules #1-4

The labs are 2- or 3-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/third weeks.

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 12:01 AM, and the quiz is due by Thursday at 11:59 PM. There is a 3-day grace period following the due date. These are un-timed activities that we estimate should not take you more than 2 hours to complete, but you can take longer if you would 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.

Midterm Exam

There is one midterm exam for this course, which will be held on Saturday, November 7, and will take place in-person. The midterm exam will consist of only multiple-choice questions. The midterm exam will be based on all lecture material provided by Dr. Yates. The midterm exam is expected to contain a mix of knowledge-based questions and applied questions.

Final Exam

The final exam will be held in-person during the official December final exam period. The final exam will consist of only multiple-choice questions. The final exam will be based on all lecture material provided by Dr. Regan. The final exam is expected to contain a mix of knowledge-based questions and applied questions.

(Clue for Quest #9)

Essential Requirements and Flexibility to Succeed

To pass this course, it is a **requirement** that you 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 completed anytime before the deadline. A three-day (72-hour) grace period is provided for all DSM deadlines. These assessments are un-timed, meaning you can take as long as you would 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 5-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.

Lab Quizzes

Stuff You Should Know

The quizzes for this activity are untimed and will be available through Weeks 1-4, which includes 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, rounded to the nearest whole number:

Grade	Numerical Range	Description
A+	90-100	Exceptional
A	85-89	Outstanding
A-	80-84	Excellent
B+	77-79	Very Good
B	73-76	Good
B-	70-72	Reasonably Good
C+	67-69	Acceptable
C	63-66	Minimally Acceptable
C-	60-62	Minimally Acceptable
D+	57-59	Unsatisfactory Pass
D	53-56	Unsatisfactory Pass
D-	50-52	Unsatisfactory Pass

For more information about grade descriptions, see Queen's FAS Academic Regulations, section 10.1.1.

Regrade Requests

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

If you are not looking for a formal regrade request but only want clarification about how a quiz or assignment was graded, please refer to the "Questions about the Course and Contacting the Teaching Team" section in this Syllabus.

Quizzes, DSMs, and Make-Up Lab Assignments

If you believe there may have been a grading mistake, 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/DSM/make-up lab 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 1B)
- 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 is 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 also refer to the "Questions" widget on the course home page.

General questions about the course, lectures or labs

Questions about the course in general

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** (blue button on the course home page). However, if you are unable to find the answer you are looking for through those means, you can post a question on the course Administrative Questions Forums.

Questions about lecture content

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 professor may be able to answer a question or two after some of the lectures as well.

Questions about the labs in general

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.

Grading clarification vs regrade request vs grade inquiry

This table summarizes the different terms and provides information about the procedures to follow.

Term	Definition	Procedure
Grading clarification	A request for more information about why you received a particular grade.	See the information provided below.
Regrade request	A request to have your work reevaluated because you disagree with the grade.	Go to "Grading Scheme and Regrade Requests" in this syllabus.
Grade inquiry	An inquiry into a missing or incorrectly recorded grade in the gradebook.	Email biol102@queensu.ca. Before inquiring about a missed grade, be sure the grades have been published, and be sure you submitted the assessment (on time).

Concerns or seeking clarification about quizzes or assignments

Concerns or clarification about quizzes

If you have a concern with the wording of an active quiz, please make a post in the appropriate thread on the Lecture Questions Forum (for Lecture Quizzes) or on the Lab Questions Forum (for Stuff You Should Know and the Pre-Lab Quizzes) before the quiz due date. In your post, without giving away any answers, please clearly explain why you believe there is a mistake.

If you would like some clarification about why a certain answer was marked as correct or incorrect, please make a post in the appropriate thread on the Lecture Questions Forum (for Lecture Quizzes) or on the Lab Questions Forum (for Stuff You Should Know and the Pre-Lab Quizzes) within one week of the grades being released.

For information about requesting a regrade of a quiz, see the Regrade Request section in this Syllabus.

Concerns or clarification about lab assignments

Your TA can address concerns and provide clarification about the lab assignments during the labs or by email (TA emails are posted on the Teaching Team page). Please note that TAs are only to respond to emails regarding lab assignment grading concerns/clarification. All other inquiries should be directed elsewhere.

For information about requesting a regrade of a lab assignment, see the Regrade Request section in this Syllabus.

Concerns or clarification about make-up lab assignments

If you are eligible for a make-up lab assignment and have questions prior to the due date, please post them to the Make-Up Labs Forum (without giving away any answers). If you have concerns or are seeking clarification about the way a make-up lab assignment was graded, within one week of the grades being released, please also post them to the Make-Up Labs Forum.

For information about requesting a regrade of a make-up lab assignment, see the Regrade Request section in this Syllabus.

Personal Matter

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 (biol102@queensu.ca), which is monitored by our administration assistant. You can typically expect a reply within 24-48 hours, Monday to Friday. Emails to the instructors' personal work emails will not be answered.

Queen's Email

In the event you do need to email the course inbox or your TA, please use only your Queen's email account. Any communications sent out by us will be to this account only.

(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

Please refer to the **Accessibility and Accommodations** and the **Mental Health & Wellness** sections on the Common Course Policies and Statements website:

https://www.queensu.ca/provost/teaching-and-learning/course-policies

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 built 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.

Please note:

- To be eligible for the relevant accommodation in this course, please be sure you have selected it in Ventus for BIOL102.
- In all email correspondence regarding accommodations, you must:
  - copy (cc) your QSAS advisor
  - indicate your lab section number, if the accommodation relates to a lab (e.g. 102)

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 4 quizzes each being worth 5%, the remaining 3 quizzes will each be worth 6.67%); 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-related Quizzes

Stuff You Should Know

If you cannot complete the Scavenger Hunt or Academics 101 quizzes 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. No extension is possible for the Biosafety quiz as successful completion is required before the Module 2 in-person labs.

Lab Quizzes

If you cannot write a 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 corresponding in-person lab assignment grade.

Labs and Lab Assignments

If you have accommodations for preferred seating for your lab sessions, please either inform your TA during your session, or contact biol102@queensu.ca. Some other classroom accommodations (e.g., for extra time, late arrival/early departure, materials available in advance) are not possible given the nature of the labs (group-based, one element builds on another, questions cannot be revealed in advance). If you feel unable to participate in the labs given this structure, you will be eligible to complete individual lab assignments instead. Please email biol102@queensu.ca to make arrangements, or if you have any questions.

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 an online make-up lab assignment, as described under "Lab Assignments" in the Academic Consideration for Students in Extenuating Circumstances section in this Syllabus.

Midterm 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 midterm exam.

If you cannot write the midterm exam as it is scheduled due to reasons related to your disability, email biol102@queensu.ca as soon as possible. In this email correspondence, you must copy (cc) your QSAS advisor. With the support of your QSAS advisor, you may be eligible to write an alternate make-up exam on a date to be determined by the teaching team and/or Exams Office.

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 the final exam as it is scheduled for disability-related reasons, email biol102@queensu.ca as soon as possible. In this email correspondence, you must copy (cc) your QSAS advisor. With the support of your QSAS advisor, you may be eligible to write a deferred final exam on a date to be determined by the Exams Office in mid-January.

Academic Consideration for Students in Extenuating Circumstances

Please refer to the **Accessibility and Accommodations** section - specifically, sub-sections 2.2.3 and 2.2.4 - on the Common Course Policies and Statements website:

https://www.queensu.ca/provost/teaching-and-learning/course-policies

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. There may be time limits on how long after the start of an extenuating circumstance that you are allowed to submit an academic consideration request. You are encouraged to check your Faculty's academic consideration procedures as soon as possible to ensure your application is submitted on time, as it is your responsibility to ensure you submit on time.

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 Name: Susan Yates
- 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 full 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 the due date and 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 each of your 4 quizzes being worth 5%, the remaining 3 quizzzes will each be worth 6.67%); 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 choose to still write the quiz.

Lab Quizzes

Stuff You Should Know

If you cannot complete the Scavenger Hunt or Academics 101 quizzes on time due to extenuating circumstances, and have an approved academic consideration that spans the quiz due date and full grace period, please email biol102@queensu.ca before the end of the grace period to request up to a 7-day extension. No extension is possible for the Biosafety quiz as successful completion is required prior to the Module 2 in-person labs.

Pre-lab Quizzes

If you cannot complete a pre-lab quiz due to extenuating circumstances, and have an approved academic consideration that spans the quiz due date and full 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 5-day window (Wed-Sun), as follows:

- Lab 1B: Week 4
- Lab 2B,C: Week 7
- Lab 3B: Week 9
- Lab 4B: Week 12

There is no need to email us; we will add your name to the make-up assignment folder and contact you by the Wednesday of the week of the make-up lab with more information.

If your academic consideration also spans the window for the make-up lab and you are unable to complete the assignment, please let us know before the make-up assignment due date.

Midterm Exam:

If you cannot write the midterm exam and have an approved academic consideration for the day of the exam, you will automatically be eligible to write an alternate make-up midterm exam, on a date to be determined by the Teaching Team and/or Exams Office. There is no need to email the course; we will contact you with more information.

Final Exam:

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

Academic Integrity

Please refer to the **Academic Integrity** section on the Common Course Policies and Statements website:

https://www.queensu.ca/provost/teaching-and-learning/course-policies

Notes about the use of Artificial Intelligence Tools in BIOL102

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. Original work, completed wholly by you, is expected to be submitted in this course.

Agentic AI tools are applications that can act autonomously on a user's behalf: completing tasks, accessing systems, and making decisions without continuous human direction. Examples include automated agents that can submit assignments, complete online activities, or interact with course platforms.

The use of agentic AI to complete, submit, or contribute to assessed work is not permitted in this course. This applies regardless of any permissions granted for the use of generative AI tools. When a tool acts on your behalf, the resulting work is not your own; this falls within existing definitions of departures from academic integrity.

You must not authorize any third-party tool or application to access Queen's systems, including onQ, using your institutional credentials. Doing so creates risks that extend beyond your own academic standing.

Technology Use

Please refer to the **Technology Use** section on the Common Course Policies and Statements website for information about IT use, Turnitin and Copyright:

https://www.queensu.ca/provost/teaching-and-learning/course-policies

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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 with onQ.

Internet Speed

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

Technical Support

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

Photo Consent

From time to time, your instructor or TA may ask for your verbal consent to have your photo taken. Photos of students participating in course-related activities may be used for promotional and outreach purposes, and may be posted on course or department websites or in course or outreach materials. Students are not required to consent to having their photograph taken: if you do not wish to be included in a photograph, simply tell the instructor or TA and move out of frame.

For more information, please see:

https://www.queensu.ca/accessandprivacy/guidance/taking-and-using-images-consent