

General Course Information

BIOL 212: Scientific Methods in Biology

A hands on laboratory course that establishes the fundamentals of scientific investigation and applies them to selected biological questions. Students will learn to develop hypotheses, design and execute experiments, and to analyze and present results. There are four modules structured as: Cell, Organism, Population, and Ecosystem, plus three "mini" skills modules, each focusing on a different set of foundational skills (lab, field, dissection).

Credits: 3.0

Pre-requisites: A GPA of 1.90 in (BIOL 102 and BIOL 103).

Lecture/Lab Times and Locations: See Solus

Course Email: biol212@queensu.ca

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.

If you enroll in the course late, please email biol212@queensu.ca immediately.

Welcome Message

Welcome to Scientific Methods in Biology! This hands-on course will teach you the fundamentals of scientific investigation and let you apply them to pressing biological questions. You will learn to develop hypotheses, design and conduct experiments, and analyze and present results.

The course design is based on active learning, which means it emphasizes learning through *doing*. There is much research to show that active learning fosters higher quality learning, but more importantly it makes for a much more exciting course! 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 Acknowledgement

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 Anishinaabe 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>

Ways of Knowing

This course is called “Scientific Methods in Biology”, but a more appropriate name might be “Western Scientific Methods in Biology”. We recognize that the Western way is just one way of knowing and other ways are equally valuable. Indigenous Peoples have been accumulating scientific knowledge on these lands for thousands of years, following traditional holistic methods.

While we teach the Scientific Method from a Western perspective, we acknowledge that this approach is not without its biases. We emphasize objectivity but know that we cannot ignore how different values, backgrounds and experiences influence us all. We strive to do our best.

Expectations

As your instructors, we will

- do our best to help you both enjoy and succeed in this course
- offer many different opportunities for you to demonstrate your abilities
- give constructive and timely feedback
- provide support and encouragement
- communicate with you respectfully

From you, as students, we expect

- 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 (see the "Academic Integrity" section later in this Syllabus)

- 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

Only assignments received by the due date (or the end of the grace period, if there is one) will be accepted. Late assignments cannot be accepted, and will receive a grade of 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. If you've submitted the wrong file, or a file in a format other than what was required (including corrupted files), we cannot accept your submission.
- Make sure you submit your file to the proper folder. Submissions submitted to the wrong folder by the due date (or end of the grace period) will receive a 10% penalty.
- For group submissions, note that 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.

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 communications are respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers say/write before you respond. Think through your response carefully before you say/send it 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. **Apply the scientific method** to biological problems by developing hypotheses with testable predictions, determining appropriate treatments/controls, designing unbiased sampling protocols, testing predictions in a statistical context, evaluating hypotheses based on results, and identifying the scope of inference.

Associated assessments:

- Lab Notebooks
- Lab Reports

2. Write all phases of a scientific article including an Introduction that integrates primary literature with the experimental question, Methods, Results, and a Discussion that situates your conclusions in the existing primary literature.

Associated assessments:

- Lab Reports (Methods, Results)
- Writing Activities/Final Submissions (Introduction, Discussion)

3. Show proficiency in practical research skills, such as maintaining a research notebook, pipetting, working with volumes, general numeracy skills, accurate use of a balance, aseptic technique, and cell culture.

Associated assessments:

- Lab Notebooks
- Skills Mini-modules (lab, field, dissection)
- Lab Practical

4. Identify how biological systems respond to their environment at the hierarchical levels of cells, organisms, populations, and ecosystems.

Associated assessments:

- In-Lecture Quizzes
- Lab Reports
- Writing Activities/Final Submissions

5. Identify and distinguish the mechanisms that allow biological systems to respond over short versus long time periods (cellular, physiological, demographic, evolution, community composition).

Associated assessments:

- In-Lecture Quizzes
- Lab Reports
- Writing Activities/Final Submissions

Course Materials

Textbook

We recommend (but do not require) the book “The Scientist’s Guide to Writing, Second Edition” by Stephen B. Heard (2022), which is available in the Campus Bookstore. You may purchase an e-copy of the book through another vendor instead, but be sure to select the Second Edition, not the First Edition:

Title:	Scientist's Guide to Writing
Author:	Heard
ISBN:	9780691219189
Price	\$35.50

You will also benefit from your first year biology textbook.

All other material will be available in onQ as needed.

Lab notebook

You'll need to have a notebook that you can bring with you to the lab and leave in the lab room all term. You can purchase a hard-cover bound notebook if you'd like, but we recommend just going with an inexpensive (e.g. dollar store) soft-cover spiral notebook, or repurposing a partially used notebook.

Lab safety

You do not need to purchase any personal protective equipment, as gloves, etc. will be provided as required; however, you will need to wear closed-toe shoes and have long hair tied back when working the lab.

Field trip

There is a mandatory field trip in this course that costs ~\$50. No specialized equipment is required, however be sure to dress appropriately and seasonally for outdoor work (e.g. sturdy footwear, rain jackets, appropriate winter clothing).

Internet-Connected Device

An internet-connected device is required to access all lectures and labs. Lecture quizzes will be completed in onQ during lecture period and must be accessed using Queen's wifi.

Suggested Time Commitment

In this course, you should expect to invest on average 10 hours per week. As this is a fast-paced, active course with many small assessments instead of fewer, large assessments, it's imperative that you set aside enough time each week to keep on top of the material.

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.

Activity	Average Hours/Week	Number of Weeks	Total
Online activities	2	6	12
Scheduled lectures	1	8	8
Scheduled labs	6	11	66

Field trip	6	1	6
Private study	2	12	24
Total			116

Timing of Final Examination

There is no final exam for this course; however, there is a hands-on Lab Practical in Week 12 to assess your progress in various lab skills development throughout the term.

Assessment

Breakdown of Assessment Grades

Component	Weight (%)
Pre-Module (In-Lecture) Quizzes	16
Lab Notebooks	16
Lab Reports	24
Lab Practical	8
Skills mini-module Quizzes + Activities	14
Writing Activities	8
Final Writing Submissions	14

Due dates for all assessments can be found in the Timeline.

Description of Assessments

Pre-module (In-Lecture) Quizzes

The pre-module components provide the biological background for each module. They connect each module to the material covered in first year biology and build the background needed to understand the research question(s) motivating each module.

There are two parts to the pre-module components. The first is a series of online lessons that you work through prior to the start of each of the four main modules. The second is a pair of lectures that review the pre-module material, allow for discussion of challenging concepts, and connect the biological concepts with the laboratory activities.

- You will be quizzed during these lectures to assess your understanding of the pre-module material. The lecture quizzes are worth 4% per module.
- Quiz answers must be submitted individually in onQ, but you will be encouraged to discuss the questions with your classmates first.
- You must attend the lectures to participate in these quizzes. Only quizzes submitted over Queen's wifi will be accepted (verified by IP address). If you are unable to connect to Queen's wifi during a lecture, notify the instructor immediately (before the quiz begins).

Lab Notebooks

Complete, properly-maintained lab notebooks are critically important physical documents in all research labs. You will make daily entries in your lab notebook, documenting the details of what you did in the lab that day. The contents of your lab notebook will serve as evidence of your participation in the labs and will be an essential resource as you write up your experiments.

- Lab notebooks are individual submissions, due at the end of the last lab in each of the 4 main modules.
- You will make one entry per lab and each entry is worth 1%, for a total of 4% per module.
- Lab notebooks will remain in the lab room (underneath your lab chair) all term.
- Lab attendance is mandatory and you must attend the lab to make a notebook entry for that day. Only entries made for dates you were physically in the lab and participating in the activities will be eligible for grading.

Lab Reports

The lab reports provide you with the opportunity to showcase the work your team has done in each of the main modules. Although the focus of each lab report will differ depending on the module, the overall structure will be similar, with sections for presenting background information, hypotheses and predictions, methodology, data and interpretations.

- Lab reports are due at the end of the last lab in each of the 4 main modules (see "Essential Requirements and Flexibility to Succeed" for information about grace periods).
- Lab reports are team submissions. All team members who attended all the labs and participated fully will receive the same grade. Individual grade deductions will be applied to team members who were absent (without approved Academic Consideration or arranged Accommodations) for any labs:
 - Labs 1, 2, 3 = 1% per lab
 - Lab 4 = 3% (higher weighting of Lab 4 reflects greater direct contributions to the Lab Report during this session)

Skills mini-module Quizzes + Activities

In the Skills mini-modules, you will learn and practice three sets of foundational skills required to conduct a variety of biological experiments: laboratory skills, field skills, and dissection skills. Each Skills mini-module begins with an online activity and quiz to prepare you for the in-person activity and assignment.

- The online activities are completed individually.
- Some of the in-person activities are completed individually and some as teams.

- The Lab Skills and Dissection Skills modules are each worth 4% in total; the Field Skills module is worth 6% in total (quiz + activity/report).

Lab Practical

Throughout the term you'll have the opportunity to learn and practice important hands-on lab skills. You'll be assessed on your proficiency in these skills during the in-person Lab Practical at the end of the term.

- The Lab Practical is worth 8% and is completed individually.
- You will have access to your Lab Notebook and a standard calculator during the Lab Practical.

Writing Component

The writing component of this course runs concurrently with the modules and is connected to the research question(s), methods, or results of the experiments you are running. Each module will focus on different aspects of writing and on a different part of a scientific paper (i.e., Introduction, Methods, Results, Discussion).

Two of these elements (Methods and Results) will be group submissions included as part of your lab reports (Organism and Population modules).

The other two elements (Introduction and Discussion), will be individual submissions, separate from your lab reports, and include two sub-components: *writing activities* and final *writing submissions*.

Writing Activities

Most of the writing activities are done using peerScholar, an online platform designed to help students strengthen not only their writing skills, but also their critical and creative thinking skills, and interpersonal communication skills. It includes three phases: writing a draft, evaluating your own work plus your peers' work, and reflecting on feedback. These activities build on one another, so if you do not complete an earlier step, you may be unable to complete the following step(s). Designated Writing TAs will provide feedback (or "feedforward") on your drafts that will guide your revisions for the final submission.

Writing Activities are assessed in this way:

- Workshop Activity (in-person; during the Writing Workshop): 1%
- peerScholar (online):
 - 1% Create phase
 - 1% Assess phase
 - 1% Reflect phase
 - Note that you must complete the earlier peerScholar phases to be able to complete the subsequent phase (i.e. if you do not submit a draft in the Create phase, then you will not be eligible to complete the Assess and Reflect phases).
 - See "Essential Requirements and Flexibility to Succeed" for information about grace periods

Final Writing Submissions

The final phase of the writing process is your final writing submission. These formal compositions will be the culmination of all your work outlining, drafting, revising, and editing. You'll be supported by your Writing TA every step of the way.

- Each of your final writing submissions is worth 7%.
- see "Essential Requirements and Flexibility to Succeed" for information about grace periods

SOME WORDS ABOUT PLAGIARISM

All of your writing must be original and your own work. Some of your writing will be submitted to OnQ using Turnitin, which allows instructors to evaluate the originality of your writing. Good writing practice is to start with a blank sheet and outline your ideas in your own words. Bad practice is to copy bits of material from other sources and then start mashing it together.

Special note regarding text generation systems submitting text written by a generation system (e.g. ChatGPT and other "chatbots" or AI software) as one's own work is considered plagiarism. All of your writing must be your own original text.

Special note regarding peerScholar: You will be reviewing your peers' work using a program called peerScholar. Although this program allows you to see other students' work, it is critically important that you do not take their ideas and incorporate them in your own work. Even if you change the wording or paraphrase, taking ideas from someone else's work and submitting them as your own constitutes plagiarism, which (even if done accidentally), is a departure from academic integrity and is treated as a serious offense. You will receive feedback from peers on your draft, which you are encouraged to incorporate for the final submission; however, you cannot take ideas or wording that your peers presented in their own submission. While some writing submissions require you to incorporate - WITH citations - ideas or information from the scientific literature, this is very different from incorporating components of your peers' work, which is strictly forbidden. If you have any questions about this, please ask your Writing TA. Review your work carefully prior to submission to ensure you have not plagiarized - intentionally or accidentally.

Essential Requirements and Flexibility to Succeed

Essential Requirement: To pass this course, you must earn a final grade of at least 50%.

In order to help students succeed, we have built in some flexibility to the design of most assessments:

In-Lecture Quizzes

Quiz timing is flexible: the instructor will ask you, as a class, to indicate whether you've had enough time to answer a quiz question before proceeding.

Lab Notebooks

You will be given time to complete your lab notebook entries as you are working in the lab, however, if you are unable to complete an entry on a given day you may complete it in the following lab session of that module. You will be given additional time to complete your entry in the final lab session for each module.

Lab Reports

Lab materials will be available in onQ in advance, so you can review it before and after the lab sessions. You will be given time to complete your lab report during lab time, however, if you need additional time, we do offer a grace period:

- Grace period for Lab Reports:

- Lab Reports will be accepted until 11:59 pm on the day of your last lab of the the module (Lab 4)

Writing Activities and Final Writing Submissions

We offer grace periods for most of the writing activities and final submissions:

- Grace period for peerScholar Submissions:
 - We offer a 1 day grace period (accepted until 11:59 pm the day after the deadline)
- Grace period for Final Writing Submission:
 - We offer a 3 day grace period (accepted until 11:59 pm 3 days after the deadline)

Skills mini-module Quizzes and Activities

The Skills prep quizzes are open for extended windows and are untimed.

The Field Skills report has a large window for submission.

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 honor 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 due date or, if there is one, the grace period (unless Accommodations are arranged in advance with the teaching team). Late submissions will receive a grade of zero.

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

Assessment Regrade Requests

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

Quizzes: If you are missing a grade for work you submitted, or believe there has been an error in the way your quiz was marked, send a regrade request to biol212@queensu.ca within one week of the quiz grades being released. Regrade requests must include:

- the name of the quiz (e.g. Cell Lecture Quiz #3)
- an explicit and clear explanation of how the work deserves a grade different than assigned

Lab and Writing Activities/Assignments: If you are missing a grade for work you submitted, or believe there has been an error in the way one of these assessments was marked:

First, within one week of the assessment grades being released, discuss the marking with the TA who marked your work (Lab Reports/Activities = Lab TA; Writing Submissions = Writing TA).

Then, if you are unable to resolve the situation, send a regrade request to biol212@queensu.ca. Requests must be received within one week of receiving the final correspondence from your TA regarding the assignment and must include:

- your lab section and group number
- the name of the assignment (e.g. Cell Lab Report)
- an explicit and clear explanation of how the work deserves a different grade than assigned
- the reason(s) why discussions with your TA did not resolve the situation
- 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 PDF 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. Depending on volume, regrade requests may not be processed until closer to the end of term.

Questions about the Course and Contacting the Teaching Team

You should be able to find the answers to most of your questions about the course in general in this **Syllabus** or in the **Timeline**. However, if you're unable to find the answer you're looking for through those means, please see the "**Contact Us**" widget on the Course Home page.

TAs will be available for questions during the labs and can be reached for certain inquiries by email (see the Teaching Team page). Course instructors are available during lectures and/or labs and monitor the question forums. Please use the course email for personal matters that can't be addressed any other way. Since the

members of the teaching team who are involved in each module change regularly through the year, please only send emails to the course inbox and we will ensure your questions/concerns make it to the correct person in a timely fashion.

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.

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.

Please note:

- To be eligible for the relevant accommodation in this course, please be sure you have selected it in Ventus for BIOL212.
- In all email correspondence regarding accommodations, you must:
 - copy (cc) your QSAS advisor
 - indicate your lab section number (e.g. 002)

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:

In-Lecture Quizzes

Since the quiz is broken into several small questions over the lecture period for the purpose of class discussion, it is not possible to provide separate room accommodations. Quiz timing is flexible and quizzes are collaborative, therefore we can not provide time-based accommodations.

If you will be unable to attend a lecture for reasons related to your disability, email biol212@queensu.ca before the end of the day of the missed lecture to let us know, and you may instead submit a short essay (between 700–900 words) that summarizes your understanding of the pre-module lessons in your own words. To ensure you are prepared for the upcoming lab activities, the essay should be submitted within two days of the missed lecture (i.e. by the end of the day that following Wednesday). Upload your essay to the Make-up Essay for Missed Lecture Quiz assignment folder.

Lab Notebooks

Though lab notebooks are meant to stay in the lab at all times, if you feel you require extra time to complete your Lab 1–3 entries, you may take your lab notebook home with you after lab and bring it back with you for the following lab.

As notebooks will be graded at the end of each module, they must remain in the lab after Lab 4. If you are unable to complete your Lab 4 entry during lab time for reasons related to your disability, leave a note in your Lab 4 entry indicating this, and your entry will be pro-rated based on the other three entries for that module.

If you are unable to attend one of your assigned lab sessions in a module for reasons related to your disability, email biol212@queensu.ca before the end of the day of your lab and we will pro-rate the grade for that day's lab notebook entry based on the other three entries for that module.

If you are unable to attend two or more of your assigned lab sessions in a module for reasons related to your disability, email biol212@queensu.ca before the end of the day of the second missed lab and you will be eligible to complete a make-up assignment to cover your missing lab notebook grades.

Lab Reports

It is not possible to have individual accommodations for time or provide extensions for group based activities like the Lab Reports; however, we do offer a grace period for this activity (see "Essential Requirements and Flexibility to Succeed").

If you are unable to attend one of your assigned lab sessions in a module for reasons related to your disability, email biol212@queensu.ca before the end of the day of your lab and you will not receive any deductions on your Lab Report for missing that session (this applies to any of the labs in a module).

If you are unable to attend two or more of your assigned lab sessions in a module for reasons related to your disability, email biol212@queensu.ca before the end of the day of the second missed lab and you will be eligible to complete a make-up assignment to cover the portion of the lab report grade you have missed.

Writing Activities

peerScholar

As the peerScholar activities build upon one another and include a peer review component, individual accommodations for time and extensions beyond the due date are not possible; however, we do offer a grace period for this activity (see "Essential Requirements and Flexibility to Succeed").

If you are unable to complete the peerScholar activities for reasons related to your disability, email biol212@queensu.ca before the end of the grace period and your missed grade will be pro-rated based on your final writing submission for that same module. Note that the PeerScholar activities involve peer review, so not participating in an earlier step (e.g. Create) will preclude you from being able to participate in a later step, meaning the full weight of all of those steps will be transferred.

Workshop Activities

If you are unable to complete a Writing Workshop activity on time for reasons related to your disability, inform your writing TA during the workshop that you will use your deadline extension accommodation, and you will be able to email your submission to biol212@queensu.ca anytime before 11:59 pm the same day. Please include your Lab section number and Writing TA's name in your emailed submission.

If you are unable to attend a Writing Workshop for reasons related to your disability, email biol212@queensu.ca before the end of the day of your session and your missed grade will be pro-rated based on your final writing submission.

Writing Submission

If you are unable to complete your Final Writing Submission for a module by the end of the grace period, contact biol212@queensu.ca to inquire about an extension.

Skills mini-Modules (Lab, Field, Dissection)

Prep Quizzes

These are designed to prepare you for the associated activity, so no extensions can be provided.

If you are unable to write a prep quiz for reasons related to your disability, email biol212@queensu.ca before the due date and your grade will be pro-rated based on your other Skills mini-modules grades.

Activity/Assignment

Due to the nature of these activities/assignments, no extensions can be provided.

If you are unable to participate in a skills lab or the field trip for reasons related to your disability, email biol212@queensu.ca before the end of the day of the activity to be eligible for the following:

- Lab Skills: You will be contacted to arrange a Make-up lab skills session to complete the activity. If you are unable to attend the make-up session your grade will be pro-rated based on your Lab Practical grade.
- Dissection Skills and Field Skills: make-up assignment

Lab Practical

Due to the nature of these activities, no accommodations for room or time can be provided.

If you are unable to participate in the Lab Practical for reasons related to your disability, email biol212@queensu.ca before the end of the day of your scheduled session to be eligible to attend the make-up session (tentatively scheduled for the following Monday). If you are also unable to participate in the make-up session, you will be eligible to complete a written make-up assignment.

Academic Consideration for Students in Extenuating Circumstances

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 Name: Barb Vanderbeld
- Instructor/Course Coordinator email address: biol212@queensu.ca

We can only offer Considerations to students who submit their academic consideration requests following this method. Please do not 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 212 for Students with Approved Academic Consideration

For students with approved academic consideration for dates spanning the assessment/activity, we can offer the following:

In-Lecture Quizzes

If you have an approved absence on the day of a lecture and are unable to attend, you may submit a short essay (between 700–900 words) that summarizes your understanding of the pre-module lessons in your own words. We advise you to complete this essay while you're waiting for your academic consideration request to be confirmed/approved - not after, as approvals may take several days. The essay will be due 2 days after the end of your brief absence, which ensures that you are prepared for the upcoming laboratories. Upload your essay to the Make-up Essay for Missed Lecture Quiz assignment folder.

Lab Notebooks

If you have an approved absence on the day of one of your assigned lab sessions in a module and are unable to attend, we will automatically pro-rate the grade for that day's lab notebook entry based on the other three entries for that module.

If you have an approved absence for two or more of your assigned lab sessions in a module and are unable to attend, you will automatically be eligible to complete a make-up assignment to cover your missing lab notebook grades.

Lab Reports

If you have an approved absence on the day of one of your assigned lab sessions in a module and are unable to attend, you will not receive any deduction to your lab report grade for missing that session.

If you have an approved absence for two or more of your assigned lab sessions in a module and are unable to attend, you will automatically be eligible to complete a make-up assignment to cover the portion of the lab report grade you have missed.

Writing Activities

peerScholar

If you have an approved absence covering a peerScholar activity window and are unable to complete the activity, your missed grade will automatically be pro-rated based on your final writing submission for that same module. Note that the peerScholar activities involve peer review, so not participating in an earlier step (e.g. Create) will preclude you from being able to participate in a later step, meaning the full weight of all of those steps will be transferred.

Workshop Activities

If you have an approved absence on the day of a Writing Workshop and are unable to attend, your missed grade will be pro-rated based on your final writing submission.

Final Writing Submission

If you have an approved absence that spans both the assessment availability window *and* the grace period and are unable to submit on time, contact biol212@queensu.ca to inquire about an extension.

Skills mini-Modules (Lab, Field, Dissection)

Prep Quizzes

If you have an approved absence that spans the availability window of the quiz and are unable to complete the quiz, your grade will be pro-rated based on your other Skills modules grades.

Activity/Assignment

- **Lab Skills:** If you enrolled in the course late or have an approved absence on the day of your scheduled laboratory skills and are unable to attend, you will be contacted to arrange a make-up lab skills session to complete the activity. If you are unable to attend the make-up session your grade will automatically be pro-rated based on your Lab Practical grade.
- **Dissection Skills and Field Skills:** If you have an approved absence on the day of your scheduled lab or field trip, you will be automatically eligible to complete the make-up assignment.

Lab Practical

If you have an approved absence on the day of your scheduled Lab Practical, you will automatically be eligible to attend the make-up session (tentatively scheduled for the following Monday). If you also have an approved absence on the day of the make-up session, you will be eligible to complete a written make-up assignment.

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

Unauthorized use of **text generative AI** software (e.g. ChatGPT or other similar software) is not permitted in this course. Submitting work written wholly or partially by generative AI software for grades is considered plagiarism. We may explore the use of AI software for academic writing in Writing Workshops: during these activities permission to use AI software will be clearly presented in written form. If you do not see written authorization explicitly stated for an activity, you should assume that AI is not permitted

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.

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 BIOL212. 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

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, issues with onQ to installing software, contact ITS Support Centre.

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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