

General Course Information

Course: BIOL 200

Course title: Diversity of Life

Pre-requisites: None. Recommended preparatory courses: BIOL 102/3.0 and BIOL 103/3.0.

Semester and year: Winter 2026

Number of credits: 3

Learning hours: 120

Modality (on campus, blended, or online): On campus

Classroom accessibility: Lecture and Tutorial rooms are both wheelchair accessible, with wide aisles, and accessible seating but with some inaccessible areas. Room doors have a handle and no automatic door operator.

One of the most wondrous features of Biology is how evolution has generated so many different ways for organisms to grow, survive, and reproduce in their environments. This variation in how organisms complete their life cycles is the fundamental basis for the Tree of Life's extraordinary biological diversity. Our overall goal in this course is to provide students with the background knowledge and interpretive skills needed to recognize and appreciate the diversity of life and the mechanisms that generated it, so that their future studies of individual organisms or biological processes are placed in an appropriate evolutionary and ecological context.

Patterns of changing organizational complexity and species diversity since life originated are explained in terms of evolutionary processes and concepts such as adaptive radiation, endosymbiosis, structure-function relationships, horizontal gene transfer, and ecological impacts of alterations in environment. This course provides a phylogenetically-based overview of biodiversity across the Tree of Life and explicitly includes viruses, archaea, bacteria, algae, fungi, plants, invertebrates and vertebrates.

Topics

Week	Topic	Tutorial
1	1. Introduction to the Diversity of Life 2. Systematics and Viruses 3. Prokaryotes: Bacteria (I)	
2	4. Prokaryotes: Bacteria (II) and Archaea 5. Eukaryotes: Structure and Origin 6. Eukaryotes: Reproduction, and Introduction to the Protists Topic	Tutorial 1 Cladistics (in-person participation + online 'quiz')
3	7. Algae (Reds and Greens) 8. Introduction to the Fungi 9. Fungi (Asco- and Basidiomycota)	Tutorial 2 Natural Selection (in-person participation + online 'quiz')
4	10. Fungal Symbioses 11. Origin, Evolution and Classification of Land Plants 12. Bryophytes and Seedless Plants	Lecture Quiz 1 (during tutorial period)
5	13. Evolution of the Seed Plants	Tutorial 3

	14. Origin and Evolution of the Angiosperms 15. Reproduction in the Angiosperms	Group worksheet based on Tutorials 1 & 2 (in-person, fully graded)
6	16. Overview: Evolutionary Trends and Synthesis Midterm – Thursday February 12 (in class)	
7	17. Zoological Concepts 18. Animal-like Protists 19. Basal Animal Phyla	
8	20. Platyhelminthes 21. Mollusca 22. Annelida	Tutorial 4 Species Sampling Curves (in-person participation + online 'quiz')
9	23. Nematoda 24. Arthropoda (1) 25. Arthropoda (2)	Tutorial 5 Invertebrates (in-person participation + online 'quiz')
10	26. Echinodermata 27. Hemichordata and Chordata 28. Fishes	Lecture Quiz 2 (during tutorial period)
11	29. Amphibia 30. Reptilia (1) 31. Reptilia (2: Aves)	Tutorial 6 Group worksheet based on Tutorial 4 & 5 (in-person, fully graded)
12	32. Mammalia	

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. Describe and discuss the diversity of living organisms across the 'Tree of Life' from both evolutionary and ecological perspectives
2. Explain the primary and secondary mechanisms that generate biological diversity across the 'Tree of Life'
3. Recognize, describe, and compare the principal unique features of a wide range of organisms including bacteria, archaea, algae, fungi, plants, and invertebrate and vertebrate animals
4. Identify the phylogenetic relationships among the major groups of organisms, and distinguish their key characteristics using conventional taxonomic terminology and nomenclature
5. Interpret the relative success and diversity of the major groups organisms in terms of adaptations for growth, survival and reproduction
6. Describe the timelines of major steps in evolution

Important University Dates

Please visit the [Faculty of Arts and Sciences Sessional Dates website](#) for all academic deadlines.

Inclusion

Land Acknowledgement

Let us acknowledge that Queen's University occupies 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 and whose practices and spiritualities are tied to the land and continue to develop in relationship to the territory and its other inhabitants today. Indigenous communities in Kingston/Katarokwi continue to reflect the area's Anishinaabe and Haudenosaunee roots. There is also a significant Métis community and First Peoples from other Nations across Turtle Island present here today. To read more about the history of the land, see the [Queen's Encyclopedia](#) and to learn more about land acknowledgements, see the [Office of Indigenous Initiatives](#).

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. In this class I will work to promote an anti-discriminatory, anti-racist and accountable environment where everyone feels welcome. Every member of this class is asked to show respect for every other member.

Building a Classroom Community

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 safer, more respectful classroom community for learners by following these guidelines:

- Make a personal commitment to learn about, understand, and support your peers.
- Assume the best of others and expect the best of them.
- Recognize and value the experiences, abilities, and knowledge each person brings to the course.
- Acknowledge the impact of oppression on other people's lives and make sure your words and tone are respectful and inclusive.
- Encourage others to develop and share their ideas.

- Pay close attention to what your peers say/write before you respond. Think through and re-read what you have written before you post online or send your comments to others.
- Be open to having your ideas challenged and challenge others with the intent of facilitating growth.
- Look for opportunities to agree with one another, building on and intentionally referencing peers' thoughts and ideas; disagree with ideas without making personal attacks, demeaning, or embarrassing others.

Fostering Accessibility

All of us have a shared responsibility for reducing barriers to learning and fostering accessibility and promoting meaningful inclusion of those with disabilities. The [Accessibility Hub](#) at Queen's University's Human Rights & Equity Office offer a host of [tutorials](#) that provide us all with practical tips for:

- creating accessible documents, e.g., to submit to your teaching team or share with peers in peer feedback activities/in a presentation,
- emails, e.g., while communicating with group members or your teaching team, and
- meeting practices (e.g., in tutorials/labs/seminars or virtual meetings).

Name/Pronoun

If, for whatever reason, you wish to change how your name appears in onQ and/or on class lists, please follow these steps. You may also use this process to add your pronouns to the appearance of your name.

1. Log into SOLUS.
2. Click on Personal Information tab.
3. Click on the Names tab
4. Click on the Add New Name tab
5. Choose Preferred from the Name Type drop down menu
6. Enter the name you would like to appear in onQ and/or on class lists.
7. Click Save.

Please allow 24 to 48 hours for your name to be registered within the system. If you have further questions or concerns, please contact ITS at Queen's University.

Course Materials & Technologies

Required Course Textbooks

Course Textbooks	Edition(s)	Publisher	For Purchase	Cost	At Queen's Library?
Campbell's Biology (Textbook sections used in BIOL 200 <u>complement</u> rather than overlap with BIOL 102, 103 and 212).	Canadian 3 rd or 4 th edition	Campbell/Pearson Authors: Urry et al, 2021/2024	Campus Bookstore; Second-hand copies from other sources are perfectly acceptable.	\$235 (new)	Yes
Diversity of Life	Modified text book developed by Instructor	McGraw Hill	Campus Bookstore Second-hand copies of this text that was used last year are perfectly acceptable.	\$140.95 (new)	No

Copyright of Course Material

Course materials created by the course instructor, including all slides, presentations, handouts, tests, exams, and other similar course materials, are the intellectual property of the instructor. It is a departure from academic integrity to distribute, publicly post, sell or otherwise disseminate an instructor's course materials or to provide an instructor's course materials to anyone else for distribution, posting, sale or other means of dissemination, without the instructor's express consent. A student who engages in such conduct may be subject to penalty for a departure from academic integrity and may also face adverse legal consequences for infringement of intellectual property rights.

Communication

Questions about the Course and Contacting the Teaching Team

Drs. Grogan, Birt, and Rooke as appropriate for lecture, tutorial, and personal issues.

Queen's Email

The university communicates with students via Queen's email. Please check your email regularly to ensure you do not miss important information related to your course.

Course Feedback

At various points during the course, you may be asked to take part in a variety of feedback activities, such as surveys and questionnaires. This feedback enables the teaching team to

improve the course. All surveys are anonymous and are directly related to activities, assessments, and other course material.

Assessments

Weighting and Alignment with Course Learning Outcomes (CLOs)

Assessment	Alignment with CLOs	Weighting
Lecture Quizzes (2 x 5%)	#1 – 6	10%
Tutorials Activities (7 x 3% + 2 x 4.5%)	#2 – 5	30%
Midterm Exam	#1 – 6	25%
Final Exam	#1 – 6	35%
Total		100%

Assessment Flexibility

Attendance and participation during in-person activities is an important component of the learning objectives in this course. We recognize that in-person attendance is not always possible, and so we provide the following flexibility regarding tutorial participation:

- There are 4 in-person participation-based tutorial activities and 4 associated online tutorial activities. We will count your best 7/8 of these activities towards your final grade.
- There are two in-person fully graded group worksheet tutorial activities, each worth 4.5%. Students who miss either of these activities with approved Academic Consideration or Accommodations will qualify for a make-up assignment.

Descriptions of Learning Activities and Assessments

Lecture quizzes

Lecture quizzes are designed to assess your understanding of lecture content and encourage students to keep up to date on lecture material. Although they will take place during your regularly scheduled tutorial section, these quizzes cover content presented during lecture and in the assigned textbook readings.

Lecture quizzes may contain a variety of question styles including multiple choice, fill-in-the-blank, true/false, and short answer. Unlike the midterm and final exam, lecture quizzes will be completed in groups of 3–5 students working together, and students will be permitted to consult their printed (hard copy only) notes. Students may not consult the textbook during these quizzes, and the use of any electronic device is not permitted. It is our hope that these group quizzes re-enforce the lecture content in preparation for the midterm and final exams, and allow students to learn from each other through discussion of quiz content.

Since discussion among group members and consultation of printed notes will take time, we have allocated proportionally more time to complete lecture quizzes than for the midterm or final exam. Lecture quizzes are designed to be completed in 40 minutes; however, students will be permitted to use the entire 80 minutes of the tutorial period. This extra time will allow students with time-extension accommodations to complete the quiz with the rest of the class, and benefit from the group discussions. To maintain confidentiality of the quiz content, students will be required to remain in the tutorial room for the full 80 minutes of the tutorial period.

Please note that the midterm and final exam will be completed individually, and you will not be able to consult printed notes during these assessments.

Tutorials

There are four Tutorial Topics in BIOL200 this year. Each topic is divided into three parts: an in-person participation-based activity, an online graded activity, and an in-person graded group worksheet. The participation and online activities are designed to help prepare you for the group worksheet, and the group worksheet is designed to assess your core understanding of the topic presented. In-person activities must be completed during the tutorial section you are registered for in SOLUS. See Timeline for dates.

- In-person participation-based activities provide a hands-on introduction of the topic and require no preparation. You will receive full credit if you participate fully in the activity. We chose to use this approach to encourage students to think creatively and experiment during the sessions without the stress of worrying about grades. The teaching team reserves the right to adjust credit based on actual participation; if you complete only half the activity, show up to tutorial late, or are not paying attention and contributing to your group, you will not receive the full participation credit.
- The online “quiz” is based on the posted tutorial content which covers the topic in more detail. Online materials become available on Wednesdays after the participation-based tutorials are complete. We recommend completing the online “quiz” within 1 week; however, they will be available for longer. You will get 3 attempts on the quiz and we will retain your highest score. Online tutorial “quizzes” must be completed BEFORE you begin the associated group worksheet. Late submissions will not be accepted.
- The group worksheet tutorials combine ideas from multiple tutorial topics together. This is a group assignment that must be completed in-person during your scheduled tutorial session. The assignment is traditionally graded and is due in hard copy at the end of the tutorial session. Late submissions will not be accepted.

Proctored Exams

Timing of Final Examinations

Once the exam schedule has been finalized, the exam date will be posted on your SOLUS account. The exam dates for each term are listed on the Faculty of Arts and Science webpage under "[Important Dates](#)." Student exam schedules for the Fall Term are posted on SOLUS immediately prior to Thanksgiving and on the Friday before Reading Week for the Winter Term. Students should **delay finalizing any travel plans until after the examination schedule has been posted**. Exams will **not be moved or deferred** to accommodate employment, travel/holiday plans or flight reservations. For information regarding what is considered extenuating circumstances and qualifications for Academic Consideration, please visit the [Faculty of Arts and Science's Academic Consideration webpage](#).

If you are unable to attend an exam and receive approval for a deferred proctored exam, a further deferral of that exam will not be accommodated.

Assignment Submission Policy

Lecture quizzes

These are group quizzes completed in-person during the regularly scheduled tutorial section. Quizzes are submitted in hard copy at the end of the period. Due to the nature of these group assignments, extensions cannot be granted. Late submissions will not be accepted.

Tutorial activities

- Tutorial participation activities may require a very brief submission as proof of participation. This will be submitted in hard copy directly to the TA before you leave class. Late submissions will not be accepted.
- Online tutorial "quizzes" are due before your associated group worksheet tutorial begins (i.e. if your registered tutorial starts on Tuesdays at 8:30 am, you must have submitted your online "quiz" before Tuesday at 8:30 am on the week of your group worksheet activity). Late submissions will not be accepted.
- Tutorial group worksheets are submitted in hard copy directly to the TA before you leave class. Due to the nature of these group assignments, extensions cannot be granted. Late submissions will not be accepted.

Policy Review of Graded Work

Teaching Assistants are trained on how to grade your assessments and exams using standardized criteria. But mistakes can happen. If you feel that a grading mistake has been made, you can submit a regrade request to the Regrade Request folder in onQ. In your request you should carefully describe which assessment you are asking about, and where and why you feel marks are missing. Be specific - generic requests for a regrade without an explanation of your concerns will not be considered.

Your regrade request must be made within one week of receiving your graded assessment. Requests after one week will not be considered. Note that all parts of the assessment may be regraded, and so your overall grade for the assignment may increase, decrease, or remain unchanged. We will respond to your request in this folder within one week.

Policies

Class Attendance

Your presence and participation in class contributes to the knowledge and skills that you will develop throughout this course. We expect that you will attend all classes, and participate in class discussions, exercises, and learning activities. These types of activities provide active engagement, and promote a deeper understanding of the course content; regular attendance and participation is typically positively correlated with student success in this course. We recognize that sometimes life disrupts our academic responsibilities. We have mechanisms built-in to the course structure which help provide flexibility when dealing with unanticipated disruptions to academic work. Please see Assessment Flexibility (above) and Academic Considerations for Students with Extenuating Circumstances (below) sections of the syllabus for more information.

Academic Support

All undergraduate students face new learning and writing challenges as they progress through university: essays and reports become more complex; effectively incorporating research into writing becomes more important; the types of assignments become more diverse; managing your time and developing the skills you need to read and think critically gets more challenging. I encourage students to contact Student Academic Success Services (SASS). SASS offers many different ways to receive support:

- Free online or in-person [appointments](#) to get personalized support on writing and academic skills from expert staff and trained peers.
- [Workshops](#) and [drop-in programs](#). SASS' [Events Calendar lists events coming soon](#).
- [Online resources](#) that provide strategies for academic skills and writing development at university.
- If English is not your first language, SASS has specific resources for [English as Additional Language students](#), including weekly programs and EAL academic skills appointments. You can meet on an ongoing basis with an EAL consultant to work on your academic writing, speaking, listening, and reading skills.

Accommodations for Disabilities

Queen's University is committed to working with students with disabilities to remove barriers to their academic goals. Queen's Student Accessibility Services (QSAS), students with disabilities, instructors, and faculty staff work together to provide and implement academic accommodations designed to allow students with disabilities equitable access to all course material (including in-class as well as exams). If you are a student currently experiencing

barriers to your academics due to disability related reasons, and you would like to understand whether academic accommodations could support the removal of those barriers, please visit the [QSAS website](#) to learn more about academic accommodations or start the registration process with QSAS by clicking **Access Ventus** button at [Ventus | Accessibility Services | Queen's \(queensu.ca\)](#)

VENTUS is an online portal that connects students, instructors, Queen's Student Accessibility Services, the Exam's Office and other support services in the process to request, assess, and implement academic accommodations.

To learn more go to: <https://www.queensu.ca/ventus-support/students/visual-guide-ventus-students>

Options Available in BIOL200 for Students with Accommodations

Attendance

If you are unable to attend an in-person lecture quiz or tutorial activity due to reasons related to your accommodations, please email the course inbox to let us know. We will treat this as an approved absence, and apply the same accommodations as listed under the “Academic Consideration” section (see below).

Lecture Quizzes

The quizzes are designed to take 40 minutes to write; however, we are providing 80 minutes to complete these quizzes. This extra time will allow most students with time-extension accommodations to participate in the group quizzes along with the rest of the class.

Given the approach we are using for lecture quizzes (i.e. group work with access to printed notes), we expect the tutorial room to be quite noisy during these quizzes. As such, **any student registered in Ventus who wishes to complete the lecture quiz individually will be permitted to do so**, and we will have a second “quiet room” set up for these students to write the quiz. Accommodation students who choose to work in the quiet room will have 80 minutes to complete the quiz and will be permitted to consult their notes just like everyone else, but they will not be permitted to talk to each other (i.e. the quiet room must remain quiet!). Just like the rest of the class, students completing the quiz in the quiet room will also be required to remain in the room for the full 80 minutes of the period (exceptions are made for restroom or food breaks as needed for accommodations, provided you do not communicate with other students, or access unauthorized materials during that time).

If you have any concerns about accessibility of these quizzes, please reach out to us at least one week before the quiz to discuss options: we will do our best to meet all assessment accommodation needs during these quizzes, but we may be limited in available resources. In particular, students wishing to use accommodations requiring a computer to complete tests, or who require a private-room, should reach out to the course inbox at least one week before the quiz so we have time to make arrangements and discuss options.

Group work Tutorials

Students with accommodations for group work will be permitted to complete group worksheet tutorials individually. If you wish to use this accommodation just let us know; you can complete the assignment during your scheduled tutorial period, or we can give you access to the make-up assignment via onQ, and you can complete the assignment on your own time.

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 any extenuating circumstance (illness, bereavement, traumatic event, injury, family emergency, etc.) which is short-lived, begins within the term, and will not last longer than 12 weeks - see [Academic Consideration](https://www.queensu.ca/artsci/undergraduate/student-services/academic-consideration) webpage for details (https://www.queensu.ca/artsci/undergraduate/student-services/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. For more information, undergraduate students in the Faculty of Arts and Sciences should consult the Faculty's webpage on [Academic Consideration in Extenuating Circumstances](#) and submit a request via the [Academic Consideration Request Portal](#). Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

Students are encouraged to submit requests as soon as the need becomes apparent and to contact their instructor and/or course coordinator as soon as possible once academic consideration has been granted. Any delay in contact may limit the options available for academic consideration. While we encourage instructors to accommodate, each instructor has discretion in deciding whether or how to apply the Academic Consideration. For more information on the Academic Consideration process, what is and is not an extenuating circumstance, and to submit an Academic Consideration request, please see the Faculty of Arts and Science's [Academic Consideration website](#). ASO courses include links to information on **Academic Consideration** on your **Course Homepage** in onQ.

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: Dr. Paul Grogan
- Instructor/Course Coordinator email address: biol200@queensu.ca

For more information, please see the [Senate Policy on Academic Consideration for Students in Extenuating Circumstances](#).

Options Available in BIOL200 for Students with Approved Academic Consideration

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

- If you have an approved absence on the day of a lecture quiz we will prorate your quiz score to your midterm grade (Lecture Quiz 1) or the final exam (Lecture Quiz 2).
- There are 4 in-person participation-based tutorial activities and 4 associated online tutorial activities, each worth 3%. We will count your best 7/8 of these activities towards your final grade. The first missed activity will count as the dropped grade, regardless of whether the student has approved absence or not. Any additional missed activities with an approved absence will be exempted up to a maximum of 4 missed activities.
- If you have an approved absence on the day of a group worksheet activity you will qualify for a make-up assignment. You can access and submit the make-up assignment via a submission folder in onQ which will become available once we receive your approved Consideration request, or once you've reached out to us indicating you need to use absence-related Accommodations. Make-up assignments are due within one week of your missed tutorial period, or within one week of the end of your Consideration period.

Queen's Policy Statement on Academic Integrity

Queen's University is dedicated to creating a scholarly community free to explore a range of ideas, to build and advance knowledge and to share the ideas and knowledge that emerge from a range of intellectual pursuits. Each core value of academic integrity, as defined in the [Senate Academic Integrity Policy](#), gives rise to and supports the next.

Honesty appears in presenting one's own academic work, whether in the context of an examination, written assignment, laboratory or seminar presentation. It is in researching one's own work for course assignments, acknowledging dependence on the ideas or words of another and in distinguishing one's own ideas and thoughts from other sources. It is also present in faithfully reporting laboratory results even when they do not conform to an original hypothesis. Further, honesty is present in truthfully communicating in written and/or oral exchanges with instructors, peers and other individuals (e.g. teaching assistants, proctors, university staff and/or university administrators).

Trust exists in an environment in which one's own ideas can be expressed without fear of ridicule or fear that someone else will take credit for them.

Fairness appears in the proper and full acknowledgement of the contributions of collaborators in group projects and in the full participation of partners in collaborative projects.

Respect, in a general sense, is part of an intellectual community that recognizes the participatory nature of the learning process and honours and respects a wide range of opinions

and ideas. However, “respect” appears in a very particular sense when students attend class, pay attention, contribute to discussion and submit papers on time; instructors “show respect by taking students’ ideas seriously, by recognizing them as individuals, helping them develop their ideas, providing full and honest feedback on their work, and valuing their perspectives and their goals” (“[The Fundamental Values of Academic Integrity](#)”, 3rd Edition, p. 8).

Ultimately, responsibility is both personal and collective and engages students, administrators, faculty and staff in creating and maintaining a learning environment supported by and supporting academic integrity.

Courage differs from the preceding values by being more a quality or capacity of character – “the capacity to act in accordance with one’s values despite fear” (“The Fundamental Values of Academic Integrity”, 3rd edition, p. 10). Courage is displayed by students who make choices and integrous decisions that are followed by action, even in the face of peer pressure to cheat, copy another’s material, provide their own work to others to facilitate cheating, or otherwise represent themselves dishonestly. Students also display courage by acknowledging prior wrongdoing and taking proactive measures to rectify any associated negative impact.

All of these values are not merely abstract but are expressed in and reinforced by the University’s policies and practices.

Syllabus statements for Generative Artificial Intelligence (AI) Tools

Using generative AI writing tools such as ChatGPT, Copilot, etcetera 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.

Queen’s [Student Academic Success Services](#) (SASS) offers a self-directed, online academic integrity module which we encourage all students to take which will help with:

- Understanding the nature of the academic integrity departure
- Understanding the expectations of and role of sources in scholarly writing
- Integrating sources into your writing (paraphrasing, quoting, summarizing)
- Understanding when and how to cite your sources
- Managing your time effectively to avoid the need for shortcuts
- Taking effective notes to ensure accuracy of source material and correct attribution