

BIOL530 – Origins of Biodiversity - Fall 2025 Syllabus

Course Information

Course: BIOL530

Course title: Origins of Biodiversity

Pre-requisites: Pre-requisite: Level 4 and registration in a Biology Honours Plan (BIOL-M-BSH, BIOL-P-BSH, BIMA-P-BSH, BIPS-P-BSH, BTEC-P-BSH, EBIO-P-BSH) and a minimum GPA of 2.0 in the Biological Foundations List or permission of the Department. [Biological Foundations List: BIOL 102/3.0; BIOL 103/3.0; BIOL 200/3.0; *BIOL 201/3.0*; *BIOL 202/3.0*; BIOL 205/3.0; BIOL 206/3.0; BIOL 212/3.0; BIOL 300/3.0; BIOL 330/3.0; BIOL 334/3.0; BIOL 339/3.0; BIOL 341/3.0];

Recommended: second year statistics (e.g. BIOL 243, PSYC 202, STAT 269)

Semester and year: Fall 2025

Number of credits: 3.0

Learning hours: 120

Modality: on campus

Classroom accessibility: Classroom is wheelchair accessible but does not have an automatic door operator. Classroom uses a video projector with room audio and moveable chairs around large tables. The room does not have power outlets at seats; room has windows. To locate single user accessible and gender neutral washrooms on campus, please visit the [Campus Map](#).

Course Website: <https://www.paulmartinlab.com/biol-530>

Course Description

This course uses the latitudinal increase in diversity towards the equator as a launching point to explore how diversity forms, is maintained, and disappears, and why we find such dramatic variation in diversity around the world. Discussions will focus on both evolutionary and

ecological perspectives of diversity, and we will review various hypotheses to explain latitudinal diversity gradients.

Course Learning Outcomes

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

1. Explain how to approach answering broad questions in biology.
2. Critically evaluate the strengths, shortcomings and significance of scientific papers and ideas.
3. Integrate across scales to understand and assess the causes of biodiversity.
4. Identify and explore the linkages between evolution and ecology at all ecological scales.
5. Generate alternative hypotheses and tests for the causes of variation in biodiversity.
6. Articulate scientific arguments in oral and written forms in a concise, respectful, and effective way, including participation within an active scientific discussion.
7. Summarize complex scientific ideas and research to their peers in an engaging way in both oral and written forms.

Important University Dates

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

Inclusion

Land Acknowledgement

Queen's University is situated on the territory of the Haudenosaunee and Anishinaabek. We are grateful to be able to live, learn, and play on these lands.

Equity, Diversity, and Inclusivity Statement

BIOL530 is committed to counteracting discrimination and developing a climate of educational equity that recognizes and respects the equal dignity and worth of all who seek to participate in the life, work, and mission of Queen's University. Such a climate is created and maintained by developing a commitment to and understanding of educational equity, supported by policies, programs, curricula, practices, and traditions that facilitate individuals, and equity-seeking groups, free, safe, and full participation. We will continue adjusting our course practices and policies each year with an aim to improving the climate of educational equity in BIOL530.

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

The course involves reading and critically reviewing scientific literature (no textbook). The instructor will provide key papers for discussion in class during the course.

Course Expectations

You should expect to invest on average 10 hours per week in this course. This includes the time you spend in class, reading course material, and completing independent work (presentations, final paper). **Keeping up-to-date with readings and assignments is your responsibility.** The course website provides detailed information on the specific requirements for each assignment, the schedule for readings and presentations, and due dates for everything.

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

Throughout this course, you may come upon some general questions about the course and any assignments. Please first check to see if your question has already been answered in the detailed instructions on the course website. If not, please email your instructor at the emails listed above. Note that the instructor's Queen's email goes to spam for Queen's users, so expect a response from the gmail address.

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.

Assessments

Weighting and Alignment with Course Learning Outcomes (CLOs)

Assessment	Alignment with CLOs	Weighting
Presentation of hypothesis & predictions	CLOs 1-7	30%
Co-presentation of critical assessment	CLOs 1-7	15%
Major written paper	CLOs 1-7	35%
In-class participation	CLOs 2,4-7	20%
Total		100%

Assessment Flexibility & Due Dates

Most of the class involves student-led presentations and discussions scheduled for specific dates, limiting our flexibility. Thus, due dates for presentations are firm; if you cannot make your date due to illness or other Queen's-approved, unforeseen issues, then we will be required to schedule a make-up class during a different time slot (all of our regular slots will be booked).

The major written paper has a three-day grace period. This means that your paper is due on the date and time specified, but I will accept all submissions within 72 hours of the deadline without penalty. Short term academic consideration is therefore built into all due dates and will not be extended past this 3-day grace period. Papers submitted after the grace period will lose 10% per day (deducted from 100%).

Descriptions of Learning Activities and Assessments

Assessment 1 - Presentation of hypothesis & predictions

Graded on: Clarity, Accuracy & Relevance, Coverage & Depth, Presentation Effectiveness, Quality of Speaking/Presenting, Flow & Organization, Enthusiasm, Professionalism
see detailed Rubric and Instructions on website

Assessment 2 - Co-presentation of critical assessment

Graded on: Clarity, Accuracy & Relevance, Coverage & Depth, Enthusiasm, Creativity
see detailed Rubric and Instructions on website

Assessment 3 - Major written paper

Graded on: Clarity, Depth & Balance, Synthesis, Critical Thinking, Organization, Overall Presentation, Sources/References
see detailed Rubric and Instructions on website

Assessment 4 - In-class participation

Graded on: providing meaningful contributions to class discussions
see detailed Rubric on website

Exams

BIOL530 does not have exams.

Policies

Class Attendance

Your presence and participation in class contributes to the knowledge and skills that you will develop throughout this course. I expect that you attend class regularly, participate in class conversations and learning activities. These types of activities provide active engagement, promote a deeper understanding of the course content, and contribute to your success in this course.

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>

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](#).

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

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 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

Turnitin Statement

This course does not make use of Turnitin.

Copy rights use statement: <https://www.queensu.ca/secretariat/policies/administration-and-operations/copyright-compliance-and-administration-policy>