Biology 4412G - Course Outline

1. Course Information

Course Information
Biology 4412G – Biodiversity Science
Lectures: Tuesday, 1:30 pm – 3:30 pm.
Tutorials: Tuesday, 3:30 pm – 5:30 pm.
(Lectures, tutorials and discussions are integrated; times above are a general outline)

List of Prerequisites
Biology 2244A – Biostatistics with a minimum 60%.
One of: Biology 3440A/B (Population Ecology), Biology 3442F/G (Conservation Biology), Biology 3445F/G (Community Ecology).

Unless you have either the prerequisites for this course or written special permission from the Department of Biology to enroll in it, you may be removed and withdrawn from this course in accordance with university policy. This may be done after the add/drop deadline of the academic term, and the course will be marked as withdrawn (WDN) on your academic record. This decision may not be appealed.

2. Instructor Information

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. Please put '4412' at the beginning of the subject for all email correspondence, including to your TA. Please note, we cannot guarantee response to questions in the 24-hour period prior to assignment deadlines.

3. Course Syllabus, Schedule, Delivery Mode

Biodiversity science is an emerging and highly integrative field of research dealing with all aspects of biological diversity. This course will address approaches and techniques for the measurement, assessment, monitoring, and management of biodiversity.

As a capstone course to Western Biology's Biodiversity and Conservation Honour's Specialization, we will build on core ecological theories from population ecology, conservation principles, community ecology, and ecosystem management.

We incorporate social, ecological, and evolutionary perspectives to understand the causes and consequences of biodiversity loss, and the socio-economics of biodiversity change. Students are expected to engage highly with course content in a way that synthesises their core ecological knowledge.

NOTE: This class is divided into a formal lecture (most classes), and various in-class activities, including group work. Additionally, this course is four (4) hours once per week; one missed class is a substantial portion of the course! It is important that students attend all lectures/tutorials. Some weeks the class will be online to facilitate guests and provide flexible access to students.

Learning Outcomes:
As a result of attending integrative lectures / tutorials and successful completion of assigned course work including projects and/or discussions, students should be able to:
- Articulate verbally and in writing what biodiversity is and the transdisciplinary nature of biodiversity science
- Articulate verbally and in writing the challenges facing the conservation of biodiversity
- Articulate verbally and in writing the dependence of human societies on biodiversity
- Read and critically evaluate scientific or policy literature on biodiversity
- Collate, manage and analyse biodiversity data
- Interpret statistical results as outputs of statistical analyses and in primary scientific literature
- Relate fundamental ecological principles (from both this, and prerequisite courses) to biodiversity concepts and issues
- Contribute substantively and collaboratively to group project documents and presentations

Lecture Schedule
Classes begin: January 5, 2026
Spring Reading Week: February 14 – 22, 2026
Classes end: April 9, 2026

Date	Week	General Topic	Delivery
06-Jan	1	Why Biodiversity Needs a Global Treaty	In-person
13-Jan	2	How Do We Measure Biodiversity?	In-person
20-Jan	3	How Biodiversity Decisions Actually Get Made	Remote
27-Jan	4	The Data Revolution	Remote
03-Feb	5	Who Decides if a Species is "At Risk"?	In-person
10-Feb	6	Who is Responsible for When Risk is Identified?	In-person

17-Feb		Reading week	
24-Feb	7	How Biodiversity Knowledge Becomes Global Assessment	In-person
03-Mar	8	Global Biodiversity Targets	Remote
10-Mar	9	Biodiversity in Food Systems and Working Landscapes	Remote
17-Mar	10	How Global Frameworks get Translated Nationally	In-person
24-Mar	11	When Conservation Becomes Law	In-person
31-Mar	12	Biodiversity, Trade, and Globalization	In-person
07-Apr	13	Simulation COP event	In-person

4. Course Materials

All course material will be posted to OWL: https://westernu.brightspace.com/

Students are responsible for checking the course OWL site (https://westernu.brightspace.com/) regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the OWL Brightspace Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements
This class has online components. You will be required to have: a computer or laptop, a working camera and microphone, and a stable internet connection.
To access the class please log into the Zoom session, which will be posted on the OWL Brightspace site.

5. Methods of Evaluation

Grading Scheme and Assessment Dates

The overall course grade will be calculated as listed below (see schedule for details):

Quizzes (10/11)	Due in class (2% each)	20%
Interviews		
As host (1/4)	Due prior to class / In class assessment	5%
As audience (3/4)	Due 2 days after class	15%
Assignments (5/6)	Due 3 days after class	50%
Final Presentation	Performed in class	10%

Use of Generative AI Tools
The use of generative AI tools (e.g., ChatGPT, Copilot, Gemini, or similar systems) **is not permitted** for any graded work in this course, including written assignments, in-class quizzes, take-home work, or

group submissions. This includes using AI to generate, rewrite, paraphrase, summarize, or substantially edit text. **Any use of generative AI for coursework will be treated as academic misconduct under university policy.**

Please read
Grades in this course come from engagement and critical thought, not producing the 'right' answer.

Biology 4412 operates on a foundation of mutual trust and academic professionalism. I invest significant time in reading your work for ideas, reasoning, and intellectual growth. Submitting AI-generated work misrepresents your learning and makes meaningful feedback impossible. Please respect the time and care that goes into reading, responding to, and evaluating your work by submitting writing that reflects your own thinking.

Generative AI can produce text that sounds polished or scientific but may be inaccurate, incorrect, vague, misleading, or poorly reasoned. *Each of these aspects will result in a grading penalty.* More importantly, reliance on AI undermines the learning goals of this course and your preparation for research, professional work, and graduate studies.

Please give yourself the gift of doing the thinking and writing in this course yourself; this is how you build confidence, skill, and readiness for whatever comes next.

General information about missed coursework
Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs,* posted on the Academic Calendar:
https://uwo.ca/univsec//pdf/academic_policies/appeals/academic_consideration_Sep24.pdf.

This policy does not apply to requests for Academic Consideration submitted for attempted or completed work, whether online or in person. The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult Accessible Education.

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage:
https://registrar.uwo.ca/academics/academic_considerations/
All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline. Students must contact their professor within this 48 hour period for discussion of re-assessment options.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request without supporting documentation in this course. However, the following assessments are excluded from this and, therefore, always require formal supporting documentation:

- The final class presentation is a required, in-person, collaborative assessment and has been designated as the assessment in this course that always requires formal documentation when requesting Academic Consideration.

Because this activity relies on real-time participation and collective discussion, the final class presentation cannot be rescheduled or replicated**.**

Students who miss the final class presentation with approved Academic Consideration and formal documentation will be required to complete an alternative individual assignment designed to assess the same learning outcomes. This alternative will differ in format and expectations and may not be equivalent in experience to the in-class presentation. Students who miss the final class presentation without approved documentation will receive a grade of zero for that component.

When a student _mistakenly_ submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Evaluation Scheme for Missed Assessments
- In-class quizzes. Each week, except the first and the last week of classes, there will be an online, open book quiz meant to help you obtain important information in preparation for each class. Students will be graded on their best 10 of 11 quizzes, which provides built-in flexibility for missed quizzes. No make-up quizzes will be offered.
- Interviews. There is a total of four (4) interview sessions in this class where student groups will host guests with a variety of backgrounds related to biodiversity issues. Each student is expected to be part of a host team to one (1) guest, and to actively engage as a participatory audience member for the remaining three (3) guests. Because interviews are live, interactive, and dependent on guest participation, missed interviews cannot be rescheduled, replicated, or made up. Interview sessions will be online, which provides built-in flexibility allowing students to participate remotely.
  - Host introductions and interview questions are due one (1) day _before_ the interview (Mondays at 1:30pm) and cannot be submitted late.
  - Audience reflections are due two (2) days _after_ the interview (Thursdays at 1:30 pm). A one-day no-penalty grace period is provided (until Friday at 1:30 pm). Late reflections are penalized 10% per day or part thereof and will not be accepted after five (5) days (Tuesday at 1:30 pm).
- Assignments. Many assignments are completed during class time. Written components are due three (3) days after they are assigned (Fridays at 1:30 pm). A three-day no-penalty period is provided (until Monday at 1:30 pm). Late assignments are penalized 10% per day or part thereof and will not be accepted after four (4) days (Tuesday at 1:30 pm). Students will be graded on their best 5 of 6 assignments, which provides built-in flexibility for missed assignments. No make-up assignments will be offered.
- Final class presentation. The final class presentation is a required, in-person, collaborative assessment and cannot be rescheduled or replicated. Students who miss this assessment will be required to complete an alternative individual assignment.
- Reflections or assignments not submitted by the final acceptance date will receive a grade of zero.

Essential Learning Requirements
Even when Academic Considerations are granted for missed coursework, the following are deemed essential to earn a passing grade.

- Completion of a minimum of five (5) written assignments is required to demonstrate sustained engagement with biodiversity concepts and to meet Senate requirements for an essay-designated course (i.e., with a suffix of E, F, G, or Z) in order to pass this course,

- A passing grade on the written assignment components is required to satisfy the Senate requirement that students must demonstrate *minimal competence in essay writing* in order to pass an essay-designed course,

- Meaningful participation in the 'live' components of the course (e.g., in-class activities and attendance during scheduled class hours) is required to demonstrate the learning outcomes of verbal articulation, collaborative engagement, and integration of biodiversity concepts. Participation is assessed formatively, with non-graded feedback provided throughout the term, including a *mandatory midterm one-on-one assessment meeting*. ***Participation is not a single behavior and cannot be reduced to attendance counts alone. It will be evaluated holistically based on whether a student has demonstrated sufficient engagement to meet the participation-related learning outcomes of the course. In cases where active participation is not possible, or where participation is deemed insufficient to demonstrate achievement of course learning outcomes, a grade of Incomplete (INC) will be assigned. Students receiving an INC will be provided an opportunity to complete the course requirements during the next offering of the course.

Coursework with Assessment Flexibility
By policy, instructors may deny Academic Consideration requests for the following assessments with built-in flexibility:

Flexible Completion
Quizzes. This course has 11 quizzes, and the 10 quizzes with the highest marks are counted towards your final grade. Should extenuating circumstances arise, students <u>do not</u> need to request Academic Consideration for the first missed quiz. Academic consideration requests will be denied for any missed quiz.
Assignments. This course has 6 assignments, and the 5 assignments with the highest marks are counted towards your final grade. Should extenuating circumstances arise, students <u>do not</u> need to request Academic Consideration for the first missed assignment. Academic consideration requests will be denied for the first missed assignment.

Deadlines with a No-Late-Penalty Period.
Assignments. Students are expected to submit each of the assignments by the deadline listed. Should extenuating circumstances arise, students <u>do not</u> need to request Academic Consideration and they are permitted to submit their assignment up to 3 days past the deadline without a late penalty. Should students submit their assessment beyond 3 days past the deadline, a late penalty of 10% per day will be applied, and late assignments will not be accepted after 4 days. Academic Consideration requests may be granted only for extenuating circumstances that <u>started before</u> the deadline and <u>lasted longer</u> than the No-Late-Penalty Period.

6. Additional Statements

6.1 Religious Accommodation
When a recognized religious holiday or observance conflicts with an examination, test, or other scheduled academic obligation, students must request accommodation via the University's Student Absence Portal (SAP). This request should identify the conflict and specify which course component(s) (e.g. test, midterm, exam) are affected.

Students are encouraged to submit the SAP request as early as possible, but no later than two weeks before any examination, or one week before any mid-term test or quiz, to allow sufficient time for adjustment.

The SAP request serves as official notification to both the course instructor and the Academic Advising Office, in accordance with University policy:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

The Faculty of Science considers religious accommodations as scheduling conflicts. Instructors should provide either a make-up exam or an earlier sitting of the same exam to accommodate the student.

For more information on recognized religious holidays, please visit the Diversity Calendar posted on the Equity, Diversity & Inclusion website - https://www.edi.uwo.ca

6.2 Academic Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf.

6.3 General Academic Policies
The website for Registrar Services is https://www.registrar.uwo.ca/.

Use of @uwo.ca email: In accordance with policy, https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf, the centrally administered e-mail account provided to students will be considered the individual's official university email address. It is the responsibility of the account holder to ensure that emails received from the University at their official university address are attended to in a timely manner.

Requests for Relief (formally known as "appeals")

Policy on Request for Relief from Academic Decision:
https://uwo.ca/univsec//pdf/academic_policies/appeals/requests_for_relief_from_academic_decisions.pdf

Procedures on Request for Relief from Academic Decision (Undergraduate):
https://uwo.ca/univsec//pdf/academic_policies/appeals/undergrad_requests_for_relief_procedure.pdf

6.4 Scholastic Offences

Policy on Scholastic Offences:
https://uwo.ca/univsec//pdf/academic_policies/appeals/scholastic_offences.pdf

Procedures on Scholastic Offences (Undergraduate):
https://uwo.ca/univsec//pdf/academic_policies/appeals/undergrad_scholastic_offence_procedure.pdf

Use of Generative AI Tools

Unless otherwise stated, the use of generative AI tools (e.g., ChatGPT, Microsoft Copilot, Google Gemini, or similar platforms) is **not permitted** in the completion of any course assessments, including but not limited to: assignments, presentations, quizzes, and interviews.

Using such tools for content generation, problem solving, translation, or summarization—when not explicitly allowed—will be treated as a **scholastic offence**.

If the use of generative AI is permitted for a particular assessment, the conditions of use will be specified by the instructor in advance. If no such permission is granted, students must assume that use is prohibited. It is your responsibility to seek clarification before using any AI tools in academic work.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

6.5 Support Services
Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, requests for relief, exam conflicts, and many other academic-related matters: https://www.uwo.ca/sci/counselling/.

Students who are in emotional/mental distress should refer to Mental Health@Western (https://uwo.ca/health/) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts, at:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Learning-skills counsellors at Learning Development and Success (https://learning.uwo.ca) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Additional student-run support services are offered by the USC, https://westernusc.ca/services/.