

Patterns in the Diversity of Life (Biology 3484B)

Course Outline – Winter 2026

1. Course Information

Class times and locations

Lecture

Section 001	Tuesdays and Thursdays	12:30pm - 1:30pm
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Tutorial*

Section 002	Tuesday	3:30pm – 5:30pm
Section 003	Tuesday	3:30pm – 5:30pm
Section 004	Tuesday	3:30pm – 5:30pm
Section 005	Thursday	9:30am – 11:30am
Section 006	Thursday	9:30am – 11:30am

*Note that most weeks, tutorials do not run. Please pay attention to the schedule in this syllabus and to announcements on the Brightspace page. We have two activities during tutorial time: a visit to the Biodiversity Collections, and a Biodiversity Walk. Please attend only during your scheduled time.

List of Prerequisites

At least 1.0 course from: Biology 2290F/G, Biology 2382A/B, Biology 2483A/B, Biology 2581A/B, Biology 2601A/B and registration in third or fourth year.

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for this course or written special permission from the Department of Biology to enroll in it, you may be removed and withdrawn from this course in accordance with university policy. This may be done after the add/drop deadline of the academic term, and the course will be marked as withdrawn (WDN) on your academic record.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

Instructor: Dr. Tim Hain

Email: thain@uwo.ca

Office: BGS 2028

Office hours: Wednesdays 11:00 AM to 3:30 PM

I have a second office in NCB that will use outside of my office hours

Teaching assistants	Email
Ben Souriol	bsouriol@uwo.ca
Laura Bax	lbax2@uwo.ca
Jude Dunukumara Udumullage	dnirosha@uwo.ca

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. Instructors will respond to emails within 48 hours during weekdays (not including weekends and holidays). Emails will usually be addressed during regular work hours (9:00 am to 5:00 pm). We may choose, at our discretion, to respond outside these hours, depending on availability. If you have questions about the course that other students in the class might like answered, please post them to the Discussion Forum on Brightspace rather than emailing the instructor.

3. Course Syllabus, Schedule, Delivery Mode

This course considers the large-scale patterns in the Earth's biota: patterns in life's diversification and extinction, changing the biota through time; patterns in the form and functioning of organisms, reflected in biological classification; patterns in the global distribution of life's lineages, and in their major responses to Earth's diverse climate.

We will discuss biodiversity, species concepts, speciation and extinction, systematics, survey the biodiversity on earth, and examine patterns in diversity that have emerged from convergent evolution and historical biogeography.

Learning outcomes

Further to the goals of the course above, outcomes for each lecture will be released with the lecture. By the end of this course, you should be able to:

1. Define biodiversity, explain species concepts, and understand systematics.
2. Describe processes of speciation and extinction.
3. Describe the biodiversity and evolutionary relationships of taxonomic groups.
4. Explain how selection and historical processes have led to biogeographical patterns seen today.
5. Describe ongoing threats to biodiversity and offer solutions.
6. Explain the significance of biodiversity collections.
7. Participate in citizen science data collection.

Lecture and assignment schedule

The lecture topics presented below may change as the semester develops. Please refer to the tutorial schedule further below.

Date	Lecture	Topic
January 6, 2026	1	Introduction: biodiversity's value
January 8, 2026	2	Systematics and describing species
January 13, 2026	3	Building and interpreting phylogenies
January 15, 2026	4	Species concepts
January 20, 2026	5	Speciation 1 – allopatric
January 22, 2026	6	Speciation 2 – sympatric
January 27, 2026	7	Cambrian explosion
January 29, 2026	8	Historical biogeography
February 3, 2026	9	Mass extinction
February 5, 2026	10	Prokaryotes and early life on Earth

Midterm February 7 at 9:30am (20%). Includes material from lectures 1-8

February 10, 2026	11	Archaea and introduction to Assignment 1
February 12, 2026	12	Eukaryote evolution
No classes February 17 or 19 – Reading Week		
February 24, 2026	13	Plants
February 26, 2026	14	Fungi
March 3, 2026	15	Animal evolution 1
March 5, 2026	16	Animal evolution 2 and introduction to iNaturalist assignment
March 10, 2026	16	Fishes
March 12, 2026	17	Amphibians and non-avian reptiles
Midterm March 14 at 9:30am (20%). Includes material from lectures 9-16		
March 17, 2026	18	Birds
March 19, 2026	19	Mammals
March 24, 2026	20	Patterns in biogeography: latitudinal gradient of biodiversity
March 26, 2026	21	Patterns in biogeography: correlates with latitude
March 31, 2026	22	Patterns in diversity: convergent evolution
April 2, 2026	23	Urbanization and threats to biodiversity
April 7, 2026	24	Solutions to the biodiversity crisis

Tutorial schedule

Tutorials begin on February 12 with visits to the Biodiversity Collections. You will be asked to sign up for a time slot between February 12 and March 5 during your regularly-scheduled tutorial time.

Date	Tutorial #	Description
January 5-	-	No tutorials
February 10		
February 12- March 5	All sections	A 30-minute visit to the Biodiversity Collections during your tutorial period. Signup will be made available in the weeks leading up to this date. Attendance is limited and you must attend during the time you had signed up.
March 10	All sections	iNaturalist assignment begins Please note the dates of your tutorial section below. You will be walking outside for this tutorial. Your assignments are due 14 days after your tutorial session.
March 10	Section 002	Biodiversity walk. Meet at your tutorial room.
March 12	Section 005	Note the dates – sections 002, 003, and 004 are on
March 17	Section 003	Tuesday. Sections 005 and 006 are on Thursday.
March 19	Section 006	
March 24	Section 004	

Classes begin: January 5, 2026

Spring Reading Week: February 14 – 22, 2026

Classes end: April 9, 2026

Exam period: April 12 – 30, 2026

4. Course Materials

There is no required textbook for this course. Naturalist photographers and illustrators are often underappreciated. Out of respect for their work, I give credit to the person responsible for the figures used in lecture. I encourage you to do the same in any work that you contribute in this course. Unless you have been given explicit permission by the content creator to share images or course material, do not post them to the internet. Doing so constitutes copyright infringement and academic misconduct.

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.

5. Methods of Evaluation

Grading Scheme and Assessment Dates

The overall course grade will be calculated as listed below:

Assignment 1: Biodiversity Collections (due Friday, March 20)	10%
Assignment 2: iNaturalist assignment (due 2 weeks after your tutorial)	15%
Midterm 1 (February 7, 9:30am-11:30am)	20%
Midterm 2 (March 14, 9:30am-11:30am)	20%
Final Exam (cumulative, scheduled by the Registrar's Office)	35%

Assignments are due at 11:59pm on the due date. However, there is a 48-hour grace period with no late penalty. Please refer to the policy on missed course work if you cannot submit your assignment by the end of the grace period.

There are no makeup midterms. If you miss Midterm 1, its weight will be evenly distributed between the two remaining tests, with Midterm 2 worth 30%, and the Final Exam worth 45% of your final mark. If you miss Midterm 2, its weight will be transferred to the final exam.

The final exam is cumulative, but you will be provided a reduced list of learning objectives from Lectures 1-16 that are testable. Most of the material will be from Lectures 17-24.

Use of Generative AI Tools

There is no university-wide policy governing the use of generative AI tools in coursework or assessments. While AI tools are excellent resources for research, it is up to the user to fact-check the output. Students are responsible for all work they submit and they should be able to knowledgably discuss their submissions as part of an oral conversation if any of the course instructors question the author of the work. If a student cannot demonstrate knowledge of the content of their submission, they may be awarded a grade of 0 on the assignment.

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.

Both assignments in this course are due on the due date indicated on OWL/Gradescope but have a no late penalty period of 48 hours after the due date. If you submit your assignment within this 48 hour time period, you do not require academic consideration and no late penalty will be applied. This grace period is meant to cover unanticipated illnesses or technical issues: a technical issue that happens during the grace period does not excuse a late submission. After the 48 hour period a penalty of 10%/day is applied to the assignment. The absolute last date for submission of an assignment (either with late penalty or academic consideration) is 1 week following the due date. If you have academic consideration after this time, the weight of the assignment will be transferred to your final exam.

Regrade requests for tests and assignments must be submitted within 3 weeks of the return of grades. Any requests received after that will not be considered.

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.

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

As described above, there are no makeup midterms. If you miss Midterm 1, its weight will be evenly distributed between the two remaining tests, with Midterm 2 worth 30%, and the Final Exam worth 45% of your final mark.

If you miss Midterm 2, its weight will be transferred to the final exam.

When a student misses the Final Exam and their Academic Consideration has been granted, they will be allowed to write the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under [Special Examinations](#)), especially for those who miss multiple final exams within one examination 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 Electronic Devices During Assessments

In courses offered by the Faculty of Science, the possession of unauthorized electronic devices during any in-person assessment (such as tests, midterms, and final examinations) is strictly prohibited. This includes, but is not limited to: mobile phones, smart watches, smart glasses, and wireless earbuds or headphones.

Unless explicitly stated otherwise in advance by the instructor, the presence of any such device at your desk, on your person, or within reach during an assessment will be treated as a *scholastic offence*, even if the device is not in use.

Only devices expressly permitted by the instructor (e.g., non-programmable calculators) may be brought into the assessment room. It is your responsibility to review and comply with these expectations.

Use of Generative AI Tools

As described above, while AI tools are excellent resources for research, it is up to the user to fact-check the output. Students are responsible for all work they submit, and they should be able to knowledgably discuss their submissions as part of an oral conversation if any of the course instructors question the author of the work. If a student cannot demonstrate knowledge of the content of their submission, they may be awarded a grade of 0 on the assignment.

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>).

Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

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.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. If you have any questions regarding accommodations, you may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

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/>