

Earth Sciences 2266G Course Outline

PLEASE NOTE: This course is designed for **in-person classroom learning**, with compulsory and active classroom activities. You are advised to consider other course options if you plan to learn remotely.

1. Course Information

Course name and number: Earth Sciences 2266G (Dinosaur and Other Vertebrate Evolution)

Academic term: Winter term (January 5 – April 30, 2026)

Location and time:

Lectures: (see information on secure course site).

Prerequisites/corequisite: Completion of first-year requirements (or by special permission).

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this course or written special permission from the Department of Earth Sciences to enroll in it, you may be removed and withdrawn from this course in accordance with university policy. This may be done after the add/drop deadline of the academic term, and the course will be marked as withdrawn (WDN) on your academic record.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

Instructors	Email	Office	Phone	Office Hours
Dr. Jisuo Jin	jjin@uwo.ca			by appointment
TA: N/A				

- Students must use their Western (@uwo.ca) email addresses when contacting course instructor and TA.
- Office hours can be arranged either in-person or by Zoom.

3. Course Syllabus, Schedule, Delivery Mode

Key dates:

Classes begin: Monday, January 5, 2026.

Spring Reading Week: February 14–21, 2026.

Good Friday (holiday): April 9, 2026.

Classes end: Monday, April 4, 2026.

Exam period: April 12–30, 2026.

First day for make-up exam: May 7, 2026.

Course Description: Introduction to the fossil record that documents the major steps in vertebrate evolution, such as the origin, radiation, and mass extinction of fishes, basal tetrapods

(amphibians), basal amniotes (reptiles, mammal-like reptiles, and dinosaurs), birds, and mammals.

Learning Outcomes: Upon successful completion of this course, students will be able to:

- describe in broad terms the basic morphological characteristics of major vertebrate groups in terms of evolution, including the addition or modification of characters that would mark the transition from an ancestral to a descendant group;
- explain the hypotheses and controversies concerning the origin of some major vertebrate groups, such as the origin of chordates, vertebrates, tetrapods, birds, and mammals;
- use fossil data to explain the patterns, processes, and controlling factors of biological evolution at the species level (e.g. Darwinian evolution) and at the faunal level (e.g. mass extinctions and recoveries).

Lectures (see information on secure course site)

Week 1	Introduction to biodiversity and the origin of chordates. Geological time scale, fossilization, and ancient environments. Fossil evidence of the oldest chordates. The vertebrate bauplan and vertebrate diversity in the context of overall biodiversity.
Week 2-3	Fishes: armours, jaws, and internal skeletal structures Evolutionary significance of jaws, teeth, vertebrae, bony fins, and lungs.
Week 4	Amphibians: walking limbs and lungs Walking limbs and lungs set the stage for invasion of land by vertebrates.
Week 5-7	Dinosaurs and other reptiles: conquerors of land, water, and air Internal fertilization, amniotic egg, and body scales enabled reptiles to conquer land on a grand scale. Dinosaurs' rule of land and conquering of air, and giant marine reptiles of sea. Rise and fall of mammal-like reptiles (proto-mammals). Vertebrate paleobiogeography and plate tectonics.
Week 8	Feathered dinosaurs and the origin of birds Feathered dinosaurs, pre-adaptation, and the origin and radiation of birds.
Week 9	Rise of the mammals Early diversification of monotreme, marsupial, and placental mammals. Examples of plate tectonics and parallel evolution.
Week 10-11	The great diversification of mammals Examples of adaptive radiation and environmental change: rodents and rabbits, carnivores, marine mammals, horses, and elephants.
Week 12-13	Primates and hominid evolution Stereovision and opposable thumb in arboreal mode of life; global cooling and shrinking forest; origin of hominids.

Essay (Term Paper)

The Essay project comprises four assignments:

- 1) Critical analysis of various types of **TITLES** in scientific journals and popular media.
- 2) Critical analysis of **ABSTRACTS** in scientific publications.
- 3) How to overcome the “writers block” and kick-start a scientific paper with a good **INTRODUCTION**.
- 4) Apply the writing techniques you acquired through the first three assignments and write an essay (~3000 words) on various aspects of vertebrate evolution (a list of suggested topics and other details will be available from the course instructor and TAs). A written self-analysis of the title,

abstract, and introduction parts of your own paper will be required as an appendix at the end of your essay.

Day Trip (*Tentative—pending budget availability of the Department of Earth Sciences*)

A weekend day trip in mid-March to the Royal Ontario Museum (Toronto) to study vertebrate fossils on display. Students will complete an assignment at the museum and submit it one week after the day trip.

Contingency plan

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

4. Course Materials

A. Recommended textbook (electronic text)

Benton, M. J. 2024. Vertebrate Palaeontology. Blackwell Publishing, Oxford, UK.
The electronic textbook can be purchased at Western's Bookstore:

https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2025B&courses%5B0%5D=001_UW/ESC2266G

B. Powerpoint lectures and video clips (free on OWL BrightSpace course site).

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Mid-term test (February 14, 9:30-10:20AM)	30%
Final Exam (TBD by University schedule)	35%
Classroom pop quizzes (randomly scheduled)	15%
Essay (due last day of lectures)	20%

6. University Policies

Use of Generative AI Tools

Generative AI tools (e.g., ChatGPT, Copilot, Gemini) are allowed for gathering information for the Essay projects, but all submitted assignments must be written in your own words.

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.

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:

- Examinations scheduled during official examination periods (Defined by policy)

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

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.

7. 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

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, lab reports, presentations, tests, and final examinations.

Using such tools for content generation, code writing, 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.

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