EEB 1454 HS
Current topics in Paleontology
Department of Ecology & Evolutionary Biology
Course Outline

Course Instructor: Robert Reisz

Robert Reisz, robert.reisz@utoronto.ca;

Lectures: Fridays from 10:00 (sharp) to 13:00. **Location at UTM DV 3016**

Course Description

Paleontology is the study of fossils, and these include body fossils, impressions, body residues, trackways. The goal of this course is to provide a broad overview of the history of paleontology, current topics of interest to graduate students, including why fossils are important in Ecology and Evolution, approaches to increase the impact of research, modern visualization and analytical methods for the study of fossils. Students will be introduced to fossil tissue histology, handling of CT data, and how to combine these two major sources of information at the macro and micro levels. Furthermore, specific papers of interest will be evaluated in a group setting. A combination of lectures and potential laboratory sessions will be used.
This course has a hybrid format, but in person attendance at UTM in DV 3016 is preferred.

Course Objectives

By the end of the course, graduate students should be able to:

- Develop a successful approach to research in the study of fossils in the context of modern biology
- Understand the utility and pitfalls of histological and computed tomographic data
- Read, understand, and critically evaluate publications in specific areas of interest.
- Understand methods of pitching your research to a broader non paleontological community

Topics and Timetable

2025	TOPICS	ACTIVITIES/LABS
Jan 10 - W1	• History of Paleontology	Short report on student area of interest. Due at end of course
Jan 17 – W2	• Histology as a tool in Paleontology • LAGs, von Ebner lines, pathology • Discuss papers related to use of histology in paleo	Hybrid Lecture: Embedding fossil samples
Jan 24 – W3	• Histology as a tool in Paleontology • Tissue determinations, pathology • Discuss papers related to pathology in fossils	Hybrid lecture: Cutting and polishing, examination of data, scientific illustration
Jan 31 – W4	• CT data reconstructions, methods of visualization and segmentation.	Hybrid lecture: Introduction to software and data acquisition
Feb 7 – W5	• Literature on the biological interpretation of paleontological data	Hybrid lecture and discussion
Feb 14 – W6	• Discussion on the importance of paleontology in the Life Sciences and what questions to ask in order to increase the impact of the research. Discuss relevant literature	Hybrid lecture and discussion
Feb 17-21	• Reading week	
Feb 28 – W7	• Student presentations (5 to 10 minutes MAXIMUM)	

Evaluation

1. **Short report on area of interest of the graduate student** (10%). Minimum 500 words. Due at January 17
2. **Assignment using histology** (20%). Histological section will be provided. Student is expected to evaluate the tissue level information, and write a short report of the results. Minimum 500 words. Due February 7.
3. **Contribution to weekly topic discussion** (10%)
4. **Term project = Report** (30%): Write a critique of a major paper of interest to the student (Due February 28
5. **Student Presentation** (30%): Each student will present a maximum 10-minute talk summarizing: The objective(s) of their thesis project in light of the materials covered in the course. February 28.

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