

Earth Science 2265A: Paleontology and Paleoecology

Fall 2018

Instructor

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Course Times

Lecture	TBA	10:30-11:20	Monday and Wednesday
Lab	TBA	2:30-5:30 and 6-9	Thursday

Texts

Textbooks for this course are **recommended**, meaning it is not necessary to purchase the texts to understand and excel in the course. Understanding of material covered in the lectures would best be supplemented by Prothero. Material covered in labs are best supplemented by Clarkson.

Lecture Texts:

Prothero, D. R. 2013. Bringing Fossils to Life. 3rd Edition. Columbia University Press

Clarkson, E. N. K. 1998. Invertebrate Paleontology and Evolution. 4th Edition. Blackwell Science.

Laboratory Text:

Lab materials will be provided in OWL prior to labs

Class notes and lab material will be made available on OWL. For copyright reasons, electronic files are for personal use by students enrolled in ES2265. Any form of duplication or electronic distribution through the web is prohibited.

Course Grades

<u>Item</u>	<u>Percentage</u>
Midterm Exam	20%
Classroom Quizzes (Random)	10%
Laboratory	30%
Final Exam	40%

Midterm Exam - This will be a pen and paper exam on October 17th. Absence from the midterm exam will not be excused except for those causes approved by University policy. This exam will consist of multiple choice, short answer, and long answer questions.

Classroom Quizzes - These will be pen and paper exams held randomly during lectures and labs. Students will be alerted the week prior to quiz being held. All will be designed to be easily completed within 10 minutes.

Final Exam - This will be a pen and paper exam written at a date to be determined by the University of Western Ontario. It will be cumulative, with emphasis on material covered after the midterm. Absence will not be excused except for those causes approved by University policy.

Labs - Every second week there will be a lab (with a few exceptions, consult the lab schedule attached in this document) focusing on a particular fossil group. Students will be expected to hand in their lab assignments 7 days after the end of the lab. Failure to complete all the labs will result in an incomplete failure of the course.

Course Themes and Objectives

This course is a survey of common invertebrate and vertebrate fossil groups as revealed by the fossil record. Students will examine how the physical remains of organisms and traces of their behavior helps geoscientists piece together the geologic record. Topics on each group include functional morphology, evolution, paleoecology and paleoenvironmental significance. Utility in dating and correlating rocks and long-term changes in biodiversity will be discussed.

By the end of this course, all students will be able to:

- Identify major groups of fossil organisms from hand samples
- Apply concepts such as evolution, diversification, and extinction to understand branches of the Tree of Life
- Interpret scientific literature to comprehend how diverse lines of evidence are used to reconstruct events in the ancient past and its effects on life today

Laboratory Schedule

Topic	Lab Date	Due Date
Lab 1: Fossilization	Sept. 13 th	Sept. 20th
Lab 2: Reef Builders	Sept. 27 th	Oct. 4th
Lab 3: Brachs and Molluscs	Oct. 18 th	Oct. 25th
Lab4: Arthropoda	Nov. 1 st	Nov. 8th
Lab 5: Deuterostomes	Nov. 22 nd	Nov. 29th
Lab 6: Vertebrates	Take Home Lab	Dec. 6th

Each lab is worth 5% of the total lab value, for a total of 30%. Though most labs follow an every-second-week schedule, there are some exceptions. Please note these exceptions and plan accordingly. All labs are due 7 days after the initial lab period. Labs will be uploaded to OWL by midnight on the due date to receive complete marks. Late assignments will be deducted 5% per day.

Lecture Schedule

Date	Topic
<i>Week 1: Sept. 6</i>	No Class
<i>Week 2: Sept. 10, 12</i>	Introduction, Taphonomy and Biostratigraphy Lab 1
<i>Week 3: Sept. 17, 19</i>	Variation and Recognition of Species in the Fossil Record Lab 1 Due
<i>Week 4: Sept. 24, 26</i>	Classification, Phylogeny, and the Origin of Life Lab 2
<i>Week 5: Oct. 1, 3</i>	Evolution and Extinction Lab 2 Due
<i>Week 6: Oct. 8-10</i>	Mid-Term Break
<i>Week 7: Oct. 15, 17</i>	Evolution and Extinction Cont.; Midterm Exam Lab 3
<i>Week 8: Oct. 22, 24</i>	Early life and the Ediacaran Biota Lab 3 Due
<i>Week 9: Oct 29, 31</i>	The Cambrian Explosion and Ordovician Radiation Lab 4
<i>Week 10: Nov. 5, 7</i>	Major Events in the Palaeozoic Lab 4 Due
<i>Week 11: Nov. 12, 14</i>	Major Events in the Palaeozoic and Early Mesozoic
<i>Week 12: Nov. 19, 21</i>	Major Events in the Mesozoic Lab 5; Lab 6 Available on OWL
<i>Week 13: 26, 28</i>	Major Events in the Mesozoic and Cenozoic Lab 5 Due
<i>Week 14: Dec 3, 5</i>	Paleoecology and Macroevolutionary Trends Lab 6 Due

Note that lecture schedule is tentative. The schedule may change according to the needs of the course or the time available. Any changes will be made known to the class in advance.

General Course Policies

- Punctual attendance of lectures and laboratory sessions is expected. Attendance for the full three-hour laboratory sessions is expected. Attendance will be monitored.
- Group discussion during the laboratories is encouraged, but laboratory exercises will be prepared individually, unless instructed (see note below regarding academic dishonesty).

- Handing in of laboratory reports on time during the term is mandatory, unless in special circumstances when arrangements have been made in advance, or illness has legitimately delayed submission. Failure to comply will result in a grade of zero for the report.
- Failure to complete and submit **All laboratory reports** will result in a final grade of **INF** for the course.
- Failure to sit at the Midterm exam or Final Exam will result in a final grade of **INF** for the course.
- Students are expected to be thoroughly familiar with the regulations associated with academic dishonesty in all its forms. They can be found on the University's website and in the calendar. Briefly: copying laboratory reports from classmates or reports from previous years, lending reports to classmates for copying, plagiarizing websites for assignments, **cheating on examinations**, defacing or hiding library materials, willfully damaging or stealing laboratory specimens, and so forth are **academic offences** and will be reported to the necessary academic authorities. The recommended penalty, on top of the 'black mark' in the student's academic record, will be **F** for the course, or expulsion.