

**Syllabus GLY 3603C  
Paleontology (Lab periods)  
Sections 0013, 042B  
Spring 2015**

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**Lab Instructor:** Alexis Rojas

**Office:** 288 Dickinson Hall

**E-mail:** [arojas@flmnh.ufl.edu](mailto:arojas@flmnh.ufl.edu)

**Phone:** 352-273-1947

**Lab periods:**

- Section 0013: Tuesday 4-5 (10:40 AM – 12:40 AM)
- Section 042B: Wednesday 7-8 (1:55 PM – 3:55 AM)

**Lab room:** 215 Williamson Hall

**Office hours:** 271 Williamson Hall, M 2-3 (8:30 AM – 10:30 AM)

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## **INTRODUCTION**

Welcome to the **Paleontology Laboratory!** This lab is designed to provide you with an understanding of fossils and their diversity. The most common groups of fossil organisms (i.e. Animalia, Protista and Plantae) are covered through the study of the fossils themselves and/or using living relatives. In order to establish threads of continuity in our discussion of the fossil diversity, this laboratory is organized around three fundamental themes: morphology, supra-ordinal taxonomy, and some applications in geosciences. The fossil diversity is so vast that is not possible to cover every fossil group in detail. However, many groups will be discussed, focusing mostly on invertebrate fossils given their high abundance and diversity compared to other organisms. Lab 1 introduces a number of general concepts in paleontology (e.g. fossilized materials, sampling, taphonomic processes) based on a case study. Lab 2 deals with some elements of the animal structure. The first two labs cover essential concepts for understanding and developing the remainder of the labs. Because the majority of fossil organisms are animals, labs 3-7 and 9 are devoted to the taxonomy and morphology of various animal phyla. It is the first step in making fossils useful to answer specific questions in geosciences. Lab 8 is a visit to the free exhibitions of the Florida Museum of Natural History. Labs 10 and 11 deal with protists (microfossils) and plants, respectively. Lab 11 is focused on a number of tools for determining past climate based on fossil leaf architecture. Finally, after this review of the fossil diversity, lab 12 is designed to give you some familiarity with paleontological databases as it relates to the study of changes in diversity through time.

## **LEARNING OBJECTIVES**

At the conclusion of this lab, students should be able to:

- Identify different modes of fossil preservation.
- Have an understanding of some destructive taphonomic processes.
- Understand and appreciate the vast diversity of fossil organisms.
- Identify major groups of fossil organisms at the class-level based on directly observable features.
- Have an understanding of working with online databases when evaluating paleobiological patterns.

## LABORATORY EXERCISES

The main approach used in this lab is specimen-based learning using fossils. The exercises consist of identification, drawing, and short answer questions based on fossil and/or living specimens. Students are expected to work in groups (2 or 3 students per group) during each lab. However, each student should hand in his/her own answers at the end of the lab session or, if more time is needed to complete the lab, on Friday afternoon at the latest. Lab 8 (Museum visit) is an individual activity that can be done any time the museum is open. The final 3 labs are computer-based exercises and at least a laptop per group is required. If a group will not be able to bring a laptop for these sessions, please talk to lab instructor in advance. The instructor will attempt to get the exercise back to you the next week and will address challenging parts from last week's exercise as needed. This way you will get relatively fast and direct feedback with the goal of improving your learning experience in this course.

## GRADING POLICY COURSE

Laboratory grade will be determined as follows:

- Mid-Term Examination (15%)
- Final Examination (15%)
- Lab exercises (70%)

The lab counts for 35% of the course in total.

## EXAMINATIONS

**Tests:** The midterm will be based exclusively on specimens. It will consist of both identification and short answer questions. The final examination will have a combination of identification and short answer questions based on specimens (>50%), multiple choice, and diagram-related questions. The final examination will only be based on material from the second half of the class.

**Make-up Exams/Laboratory exercises:** Excuses will be evaluated on a case-by-case basis. Acceptable reasons for absence from a lab include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, and professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences for court-imposed legal obligations (e.g. jury duty or subpoena) must be excused. If at all possible, let me know in advance if you must miss a lab. In all cases, I must have your documentation within two days following the lab. If you fail to notify me by then, no make-up will be offered. A make-up for both the mid-term and the final examination may be of a different format and structure than the original.

## ATTENDANCE

Weekly participation at labs is mandatory for all students. Attendance is the easiest way to do well in any lab.

## A FEW TIPS FOR DOING WELL IN THIS LABORATORY

- Laboratory reports are to be turned in the end of each lab session or, if more time is needed to complete the lab, on Friday afternoon at the latest to the lab instructor in person. The grade will be docked 10% for each calendar day it is turned in late.
- Keep all exercises in a single folder for this lab is highly recommended.

- You are very welcome to ask questions during or after the lab sessions, per email, or during office hours.

### **EMAIL ETIQUETTE AND POLICY**

If you email me and I receive the email, I will respond. If you do not receive an answer from me, then I did not receive your email. I will do my best to respond to your email within 24 hours. It is best for you to email me from your ufl.edu email address. Other addresses may get flagged as spam.

### **IN CLASS REGULATIONS**

Please be courteous to those around you, and take care of the classroom. You may bring in water bottles, but save snacks for before or after class. All electronic devices must be turned off, put away, and out of sight during class. Exceptions may be made for laptops, audio recorders, etc., but only if needed for class activities as determined by the instructor.

### **STUDENTS WITH DISABILITIES**

The University of Florida is committed to providing academic accommodations for students with disabilities. Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students should present their accommodation letter to me supporting a request for accommodations. The University encourages students with disabilities to follow these procedures as early as possible within the semester.

2015 Spring schedule Paleontology (Lab periods)

Week	Day	Date	Laboratory Title	Summary of topics covered	
	1	T 6-Jan	Lab orientation	Description of laboratory exercises structure, learning objectives, limitations and challenges; presentation of major groups.	
	W 7-Jan				
	2	T 13-Jan	1. Basic concepts, Fossilization and Taphonomy	Samples, sample collection, and counting methods; fossilized materials and related concepts; taphonomic processes.	
	W 14-Jan				
	3	T 20-Jan	2. Animal architecture	Body symmetry, cephalization, cellularity, body size, locomotion and support.	
	W 21-Jan				
	4	T 27-Jan	3. Echinodermata	Crinoidea (sea lilies), Asteroidea (sea stars), Ophiuroidea (brittle stars), Echinoidea (sea urchins) and Holothuroidea (sea cucumbers).	
	W 28-Jan				
	5	T 3-Feb	4. Porifera and Cnidaria	Various sponges and corals	
	W 4-Feb				
	6	T 10-Feb	5. Arthropoda	Trilobitomorpha (trilobites), Crustacea (e.g., crabs, barnacles), Hexapoda (insects), Myriapoda (millipedes, centipedes), and Chelicerata (e.g., spiders, horseshoe crabs)	
	W 11-Feb				
	7	T,W	17-18 Feb	Mid-Term Examination	
	8	T	24-Feb	6. Mollusca	E.g. Gastropoda (snails), Bivalvia (clams), Scaphopoda (tusk shells), and Cephalopoda (e.g., squids, ammonites)
	9	W	25-Feb		
	10	T,W	3-4 Mar	No class – Spring Break	
	11	T W	10-Mar 11-Mar	7. Bryozoa and Brachiopoda	Various moss animals; Lingulata and Craniata (inarticulate brachiopods), Strophomenata and Rhynchonellata (articulate brachiopods)
12	T,W	17-18 Mar	8. Museum Fieldtrip Exhibition of Florida Fossils: Evolution of Life and Land		
13	T W	24-Mar 25-Mar	9. Hemichordata and Chordata	Graptolites and vertebrates	
14	T W	31-Mar 1-Apr	10. Protista	Exploration of microfossils and their use	
15	T W	7-Apr 8-Apr	11. Plantae	Tree rings, leaf architecture, leaf-margin and leaf-area analyses, stomatal index; plant-animal interactions.	
16	T W	14-Apr 15-Apr	12. Getting started with Paleobiology Database	Introduction to the Paleobiology database (PBDB), and calculating diversity curves using Excel.	
17	T,W	21-22 Apr	Final Examination		

