

# Paleontology Lab Syllabus

**Paleontology Laboratory**

**GLY 3603C Spring 2020**

**T Period 4-5 (10:40-12:35) & W Period 8-9 (3:00-4:55)**

**Williamson 210**

**Lab Instructor:** Kristopher Kusnerik

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

**Office Hours:** TBA/By appointment

## Introduction

Welcome to the **Paleontology Laboratory**! This lab is designed to provide you with an understanding of fossils and their diversity through time. The most common groups of fossil organisms 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, taxonomy, and applications in geosciences. The fossil diversity is so vast that it 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.

## Learning Objectives

At the conclusion of the 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.
- Apply paleontological methods to solving bigger problems in geology and biology
- Understand 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 encouraged to work in groups during each lab. However, each student should hand in his/her own answers at the end of the lab session. 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**

Laboratory grades will be determined as follows:

- Midterm examination (15%)
- Final examination (15%)
- Lab exercises (70%)

This lab counts for 30% of the course final grade in total.

## **Assignments, Attendance, and Absences**

Laboratory reports should be turned in at the end of each lab session. Additional time may be allowed at the discretion of the instructor on a case-by-case basis. The grade will be docked 10% for each calendar day it is turned in late. If for any reason this becomes a problem and you are unable to turn in the assignment by the specified due date, please contact the instructor as soon as possible to discuss alternative options.

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

Excused absences will be evaluated on a case-by-case basis. If at all possible, please let me know in advance if you must miss a lab or examination. If you cannot notify me in advance, please do so within two days of missing the lab/examination period. If you fail to notify me by then, no make-up will be offered. When applicable, I may ask for documentation of the absence reason (doctor's note, traffic ticket copy, etc.) to be presented by the following class period.

## **Email Etiquette and Policy**

Email is by far the easiest and most effective method of contacting me. If you do not receive a response from me, then I likely did not receive your email and please send a follow-up. I will do my best to respond to all emails within 24 hours. For quicker responses, please email me directly rather than through Canvas, as I check my UF email more often than I check Canvas.

## **Classroom Etiquette**

Please be courteous to those around you and take care of the classroom. All electronic devices should be turned to silent, put away, and not be used during class unless required for the lab. Exceptions may be made for laptops, audio recorders, or similar devices with instructor approval.

## **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.

## **Lab Schedule**

Please note that schedule is subject to change at the discretion of the instructor and likely will. I'll keep you all updated when changes need to be made.

Week 1 (Jan 14/15) **Lab 1 *Basic Concepts, Fossilization, and Taphonomy***: Diversity overview, fossilization methods; taphonomic processes

Week 2 (Jan 21/22) **Lab 2 *Porifera and Cnidaria***: Various sponges and corals

Week 3 (Jan 28/29) **Lab 3 *Bryozoa and Brachiopoda***: Various “moss animals”; Lingulata and Craniata (inarticulate brachiopods), Strophomenata and Rhynchonellata (articulate brachiopods)

Week 4 (Feb 4/5) **Lab 4 *Microfossils***: Protista (foraminifera, diatoms, algae, and the like)

Week 5 (Feb 11/12) **Lab 5 *Mollusca***: Gastropoda (snails), Bivalvia (e.g. clams, oysters), Scaphopoda (tusk shells), and Cephalopoda (e.g. squids, ammonites)

Week 6 (Feb 18-19) **Midterm examination**

Week 7 (Feb 25/16) **Lab 6 *Arthropoda***: Trilobitomorpha (trilobites), Crustacea (e.g., crabs, barnacles), Hexapoda (insects), Myriapoda (millipedes, centipedes), and Chelicerata (e.g., spiders, horseshoe crabs)

Week 8 (Mar 3/4) **SPRING BREAK. NO CLASS.**

Week 9 (Mar 10/11) **Lab 7 *Echinodermata***: Crinoidea (sea lilies), Asteroidea (sea stars), Ophiuroidea (brittle stars), Echinoidea (sea urchins) and Holothuroidea (sea cucumbers)

Week 10 (Mar 17/18) **No Lab, Fieldtrip**

Week 11 (Mar 24/25) **Lab 8 *Three-dimensional Fossils***: Using 3D scans and models

Week 12 (Mar 31/Apr 1) **Lab 9 *Paleobotany***: Plants and palynology

Week 13 (Apr 7/8) **Lab 10 *Hemichordata and Chordata***: Graptolites and vertebrates

Week 14 (Apr 14/15) **Lab 11 “*Big Data*” in *Paleontology***: Introduction to the Paleobiology Database (PBDB), coding, and calculating extinction and diversity curves

Week 15 (Apr 21/22) **Final examination**