

Darwin Lab

Fall 2022

General Information

Class Days/Times: M 2:00 - 5:00 pm
Instructor: Dr. Deanna Soper
Office, Phone, and e-mail: Science Building 140, 972-721-5245, dsoper@udallas.edu
Dr. Soper's Office Hours: will be virtual and by appointment only, to schedule an appointment go to: bit.ly/SoperOfficeHours
Text: No Required Text
Software: Required Software Purchase: SimBio (see instructions below)

Cell Phone Policy

Cell phones and tablets can be helpful tools during the learning process. However, it is important to use them wisely. Texting, talking on your phone, and e-mailing during lecture may result in deduction of points (amount is at the discretion of Dr. Soper) from your total score at the end of the semester.

Introduction

In this laboratory, you will use hands-on activities to explore broad concepts of biological evolution. This course is intended to utilize software (about 50% of labs will be virtual) and hands-on activities to teach how biological evolution occurs. Charles Darwin was the discoverer of the first known mechanism of evolution, natural selection. While many labs will examine natural selection, three other evolutionary forces are known to exist (mutation, genetic drift, migration) and will also be examined. You will be visiting Dinosaur Valley State Park and that in conjunction with a Fossil Lab on our campus will result in a formal lab report and reflection of concepts that you learned.

By the end of the semester you should be able to:

1. Describe all four processes of evolution.
2. Design a basic experiment using good experimental design.
3. Perform academic research using databases such as Google Scholar and Science Direct.
5. Provide examples, with data, of the four evolutionary processes.

Assessments

SimBio Quizzes and Workbooks (25 points X 6 labs = 150 points total)

For each virtual lab activity you will utilize your module purchased through SimBio. Instructions will be provided to you in a welcome e-mail that will come within a few days. You will complete a “quiz” at the end of each and will get points for completion once you submit your worksheets that accompany the lab. As an instructor, I will be able to see if you have registered, completed labs, and will have access to quiz scores. The SimBio Labs titled “Evolutionary Evidence”, “Flowers & Trees”, and “HIV Clock” all have pdf workbooks that you will have to download to your computer to complete. The others will be “tutorial” - meaning that the program itself will have questions for you to answer along the way. For the workbooks, you will upload a completed pdf copy to the dropbox on Brightspace by the due date/time of the lab (see schedule below). Please make sure to have registered and logged into Simbio by Week 3.

Short Lab Reports (25 points each = 100 points total)

There will be three short lab reports over three different labs. The four labs are: Mendelian Genetics of Corn, Human Genetic Traits, Evolving Enzymes, and Hominid Skull Lab.

Fossil Lab & Perot Museum Worksheets (50 points)

Perot Museum Lab - Transportation

You will be carpooling or taking the DART to get to the Perot Museum. You will need to be at the museum by 2:30. We will need to check in all at once. From there you will be led to the area where you will be making observations.

Total Points Possible: 300 points

PLEASE NOTE: Although you will be collecting data each week in pairs or groups, EACH person should write their own lab reports, whether they be short lab reports or the final lab report. Every work turned in should be original to the person turning them in. Plagiarism will result in a zero for the assignment and will be reported to the Dean.

Academic Honesty

Students are expected to maintain academic honesty through avoiding plagiarism and cheating. See the University of Dallas’ policy on Academic Honesty at:

http://www.udallas.edu/about/university-policies/academic_policies/academic-honesty.php

Course Schedule**

Date	Lab	Due*
Week 1 (Aug. 29)	Introduction, Library Research; Lab 1: Fossil Lab	
Week 2 (Sept. 5)	No Lab - Labor Day	
Week 3 (Sept. 12)	Lab 2: Perot Museum	Sign up for SimBio Due
Week 4 (Sept. 19)	Lab 3: Evolutionary Evidence (SimBio) - Workbook Lab	Lab 1 & 2: Fossils Worksheets Due
Week 5 (Sept. 26)	Lab 4: Darwinian Snails (SimBio) - Tutorial Lab	Lab 3: Evolutionary Evidence Due
Week 6 (Oct. 3)	Lab 5: Mendelian Genetics of Corn	Lab 4: Darwinian Snails Due
Week 7 (Oct. 10)	Lab 6: Human Genetic Traits	Lab 5: Medelian Genetics of Corn (Short Lab Report) Due
Week 8 (Oct. 17)	Lab 7: Mendelian Pigs (SimBio) - Tutorial Lab	Lab 6: Human Genetic Traits (Short Lab Report) Due
Week 9 (Oct. 24)	Lab 8: Evolving Enzymes	Lab 7: Medelian Pigs Due
Week 10 (Oct. 31)	Lab 9: Genetic Drift & Ferrets (SimBio) - Tutorial Lab	Lab 8: Evolving Enzymes (Short Lab Report) Due
Week 11 (Nov. 7)	Lab 10: Flowers & Trees (SimBio) - Workbook Lab	Lab 9: Genetic Drift & Ferrets Due
Week 12 (Nov. 14)	Lab 11: Hominid Evolution Skull Lab	Lab 10: Flowers & Trees Due
Week 13 (Nov. 28)	Lab 12: HIV clock (SimBio) - Workbook Lab	Hominid Skull Evolution (short lab report) Due
Week 14 (Dec. 5)	No Lab	Lab 12: HIV Clock Due

*All labs due by the start of the lab period (2pm).

**changes to the schedule may occur if unforeseen circumstances present themselves.

Other Policies

Academic Success

As always, if students have any questions about course content students are encouraged to email the instructor or select an office hours slot for help. Support is also available for students who need it through the Academic Success Center and Writing Lab. These services are not remedial; rather, the assistance they offer is designed to benefit all students. The tutors in the Tutoring Center can go over your notes with you and help you prepare for tests. The Writing Lab tutors can help you at every stage of the writing process: from brainstorming to developing a good thesis statement to organizing body paragraphs to improving prose style. The Tutoring

Center and Writing Lab open a couple of weeks into the semester. Go to udallas.edu/tutors to see all these options and make an appointment.

ADA Statement

For students who require accommodations to their educational delivery or assessments, please make sure to have filed proper paperwork through our Student Disability Services Office. Show the official documentation with the specific accommodations to the instructor as soon as possible so that proper delivery and assessment of the content can be provided. More information can be found at:

<https://udallas.edu/offices/student-disability-services/>.

Withdrawing from the Course

A student who is unable to complete a course may withdraw and receive a grade of “W” through the tenth week of the semester. Students should consult with their instructor and advisor before withdrawing from a course.

Attendance Policy

Because this is a laboratory course, students MUST attend all. Any absence will result in loss of points for that week because once the class has collected data for that lab we will not go back and repeat it. After three absences you will receive an “F” for the course.

General Rules and Expectations for the Course

ATTENDANCE

1. Assignments will be completed by the specified deadlines. The instructor is under no obligation to accept unexcused late assignments and can assign a score of zero points. Late assignments accepted by the instructor may be penalized 50% of the assignment's total value.
2. Students will conduct themselves in a courteous and responsible manner in class and keep scholastic integrity (see Academic Honesty).
3. Students have one week to challenge any grade given. After one week, the grade is final.
4. Students are expected to check their University E-mail accounts and Brightspace on a regular basis for additional messages related to the course. Please use University E-mail accounts when communicating with the instructor electronically.
5. Students who are performing unsatisfactorily in the course are expected to discuss their performance with the instructor. The instructor is available by appointment outside of class to review course material and discuss strategies to improve performance.
6. The course schedule is subject to change. Deletions and substitutions in the syllabus schedule may occur.

Change of Grade

The only reason for which a change of course grade may be requested is an error in the original recording of the grade. Students are obliged to check their transcripts and consult with me if there is a question of error. The appeal for a change of grade must be made in the first three weeks of the semester following that in which the course was taken.