

Course: Evolution (BIOL 4260/5260)

Location: Virtual, synchronous lectures through Zoom. (*See Canvas for meeting links.*)

Instructor:

Dr. Zacchaeus Compson

Email: zacchaeus.compson@unt.edu

Office Hours:

Immediately after class or by appointment.

Textbook:

Herron JC, Freeman S (2014) *Evolutionary Analysis*. 5th ed. Pearson. (ISBN: 978-1292061276 [paperback]; 978-0321616678 [hardback])

Prerequisites:

Human Heredity (BIOL3350) or Genetics (3451/3452), or equivalent.

Course Information on Canvas: <https://unt.instructure.com>

Zoom links and supplementary information for the lectures will be on Canvas. The course Canvas site will include a list of frequently asked questions (FAQ), as well as an aggregated, anonymous list of weekly, student-submitted questions and my responses. The web information is not a substitution for class attendance.

Exams (total exam grade points = 300 or 400 pts):

There will be four exams (including the final exam) during the semester, each worth 100 pts. For those enrolled in BIOL-4260, *the lowest score of your first three exams will be dropped for your final grade*. Exams will consist of definitions, problems, short-answer and multiple-choice questions.

Literature Summary Assignments (25 & 75 pts):

There are two assignments that require a written summary of current research in Evolutionary Biology. Each summary should not extend beyond a single paragraph (or **300 words maximum**; typed, Times New Roman font size = 12, double spaced, with one-inch margins). You will submit your assignments online via the course website on Canvas. No printed hard copies will be accepted.

Summary paragraph 1 (25 pts): Write a summary paragraph describing a research paper from the primary, peer-reviewed scientific literature focused on a topic in the field of Evolution published between 2015-2021. See assignment on Canvas for additional information.

Summary paragraph 2 (75 pts): Identify three peer-reviewed research papers from the primary literature that focus on a particular evolutionary question and, in some way, are complementary with each other (i.e., build on each other or provide mutual insight). Write a paragraph that combines a brief overview of each of the studies, along with a short discussion focused on the conceptual threads or arguments that connect the papers. See assignment on Canvas for additional information.

Phylogenetic and Population Genetics Homework (3 assignments, 25 pts each; 75 pts total):

Assignments will be required during the semester and posted on Canvas.

Participation and Attendance – iClicker Reef Polling (25 pts):

Engagement, participation and interaction are important elements of the learning process. To that end, we will be using Reef Polling, so each student must be registered to iClicker Cloud (or Reef) and have a device (computer, smartphone, or tablet) for polling responses in this course.

First, link your iClicker account to this course. You will be asked to create an iClicker account if you do not already have one set up. Login to the course website on Canvas. To link your iClicker account with the course (or create an iClicker account if you do not already have one), choose “iClicker Sync” on the side menu on the course website on Canvas. Next, choose “Launch iClicker Reef”. If you already have an account, just login to iClicker Reef and choose this course (see below). If not, you will need to create an account with Reef by following the directions to create an account. Choose “University of North Texas” as your institution, and then fill out the requested information. Make sure you enter your EUID as used when logging into Canvas, otherwise the two accounts will not be linked and you will be unable to view your points from the Reef Polling questions from within Canvas.

Next search for each course in which you will use iClicker Reef. This course is listed as follows: SP21 BIOL 4260.001/5260.001 – Compson. Second, you will need to download the Reef Polling App on your device for use in class. See the following URL: <https://www.iclicker.com/students/apps-and-remotes/apps>. Make sure you bring a device to class that will allow you to participate in the REEF Poll when prompted. I will let you know when it is time to JOIN the course on iClicker during class. We may not use iClicker every lecture, but be prepared when required (i.e., have your device with you during the lectures and make sure they are connected to WiFi).

REEF grading: You will receive 0.5 points for each answer recorded (participation) and an additional 0.5 points for each correct answer, for a total of 1 point possible per question. The questions will focus on content covered in class on the day of the REEF Poll. Therefore, you are ***receiving credit for participating*** and ***additional credit for answering correctly***.

Grading (total points: BIOL 4260 = 500 pts; BIOL 5260 = 600 pts):

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F ≤ 59%

Attendance Policy:

To learn the material, it will benefit you greatly to attend class. When you attend class, you have the benefit of seeing, writing, and hearing the material, as well as the ability to ask questions and hear your peers ask questions. While I will not formally take attendance or monitor your participation, if you do not attend class, you are still responsible for all material covered during that class meeting, and you will receive a zero (0) for missed participation points (i.e., answering Reef Polling questions) and any missed assignments.

Make-up exams:

Make-up exams are allowed only for valid medical reasons or official school activities, in which case a verifiable written excuse is required. Students who have a valid reason for missing an exam may PRE-ARRANGE (before the exam) a date for taking the make-up exam. If a student misses an exam without making arrangements prior to the exam date, or misses the arranged make-up exam, the student will obtain a zero for the missed exam. ***The instructor has the option of choosing a different test format for the make-up exam.***

Incomplete (I) Grade:

Do not ask for an "Incomplete" grade unless you have a MAJOR life event that does not allow you to attend class. I will only give an incomplete grade under extraordinary circumstances. Please refer to the UNT policy regarding incomplete grades.

Academic Dishonesty:

Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam. Additionally, the incident will be reported to the Dean of Students, who may impose further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: a.) use of any unauthorized assistance in taking quizzes, tests, or examinations; b.) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; c.) acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; d.) dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or e.) any other act designed to give a student an unfair advantage. The term "plagiarism" includes, but is not limited to: the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment, and the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Disabilities Accommodation:

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time; however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at <http://disability.unt.edu>. You may also contact them by phone at (940) 565-4323.

Acceptable Student Behavior:

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc. See <https://deanofstudents.unt.edu/conduct> for more information.

Retention of Student Records:

Student records pertaining to this course are maintained in a secure location by the instructor. All records, such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Coursework completed via the Canvas on-line system, including grading information and comments, is also stored in a safe electronic environment. You have a right to view your individual record; however, information about your records will not be divulged to other individuals without proper written consent. You are encouraged to review the Public Information Policy and F.E.R.P.A. (Family Educational Rights and Privacy Act) laws, as well as the university's policy in accordance with those mandates (see: <https://registrar.unt.edu/faculty/ferpa-and-student-records>).

Tips for Success:

Students will be expected to complete reading assignments and think about the lecture topics *before* attending lectures (see Schedule below). This is important because the lectures are designed to consolidate and deepen your understanding of the material, not to introduce you to the concepts for the first time. Do as many review problems as possible at the end of each textbook chapter. Concentrate your efforts on understanding key concepts that are stressed in class. Virtual study groups are encouraged. The study of evolution is problem and fact oriented. **DO NOT WAIT UNTIL THE NIGHT BEFORE THE EXAM TO START STUDYING.** I recommend reading the chapter prior to the lecture's scheduled date as listed in the syllabus calendar. The study of Evolution requires much more study time than required by many biology courses. Memorization is not encouraged because a better understanding of evolutionary concepts and principles is achieved through an accumulation of evidence and thought. Attend all lectures and ask questions during class if necessary.

Evolution and Religion:

This is a science course. The content of the course is based on information accepted by the scientific community. This course is not designed to challenge your personal belief system in any way, and you should not feel threatened by the information presented if it does not agree with your beliefs. You are responsible for learning the material presented in the course and for understanding why scientists have arrived at the conclusions they have in the field of Evolutionary Biology, even if you personally disagree with those conclusions.

Date	Topic	Reading
Jan. 12 (T)	Intro. and expectations	
Jan. 14 (Th)	Pattern of Evolution	Drobzhansky 1973; Gregory 2008; Chapter 2
Jan. 19 (T)	Darwinian Natural Selection	Chapter 3
Jan. 21 (Th)	Darwinian Natural Selection (continued)	
Jan. 26 (T)	Video: <i>Darwin's Dangerous Idea</i>	See link on Canvas.
Jan. 28 (Th)	Phylogenetics: Mapping Evolution	Chapter 4
Feb. 2 (T)	Phylogenetics (continued)	HW 1 due (by midnight)
Feb. 4 (Th)	Phylogenetics (continued)	
Feb. 9 (T)	Exam I (Chapters 2-4)	
Feb. 11 (Th)	Mutation and Genetic Variation	Chapter 5
Feb. 16 (T)	Hardy Weinberg Equilibrium	Chapter 6, pg. 179-191
Feb. 18 (Th)	Mechanisms of Evolution: Selection and Mutation	Chapter 6, pg. 191-227 HW 2 due (by midnight)
Feb. 23 (T)	Mechanisms of Evolution: Migration, Drift, and Random Mating	Chapter 7
Feb. 25 (Th)	Evolution of Sex and Linkage Disequilibrium	Chapter 8 HW 3 due (by midnight)
Mar. 2 (T)	Review Population Genetics HW problems	
Mar. 4 (Th)	Exam II (Chapters 5-8)	
Mar. 9 (T)	Adaptation: Studying Form and Function	Chapter 10
Mar. 11 (Th)	Adaptation (continued)	
Mar. 16 (T)	Sexual Selection	Chapter 11, pg. 407-423 Writing Assignment 1 due (by midnight)
Mar. 18 (Th)	Sexual Selection (continued)	Chapter 11, pg. 423-441
Mar. 23 (T)	Social Behavior	Chapter 12
Mar. 25 (Th)	Exam III (Chapters 10-12)	
Mar. 30 (T)	Fossil Record	Chapter 18, pg. 691-709
Apr. 1 (Th)	Speciation	Chapter 16
Apr. 6 (T)	Speciation (continued)	
Apr. 8 (Th)	Macroevolution	Chapter 18, pg. 709-730
Apr. 13 (T)	Intimate Partnerships: Coevolution	See material on Canvas. Writing Assignment 2 due (by midnight)
Apr. 15 (Th)	Video: <i>The Evolutionary Arms Race</i>	See link on Canvas.
Apr. 20 (T)	Human Evolution	Chapter 20
Apr. 22 (Th)	Final Exam Review	
Apr. 29 (Th)	Final Exam (Chapters 16, 18, 20, and coevolution) 10:30 a.m. – 12:30 p.m.	

**This schedule is tentative and subject to change when necessary.*