

Biology 315, Spring 2015

Evolution

Text: Evolutionary Analysis (5th ed.) by Jon Herron and Scott Freeman (required).

Copies of Freeman and Herron are available from the ISU bookstore.

Course web site: We will use Blackboard to present and manage the course lecture notes, homework assignments, and exams.

Prerequisites: Genetics 313 is not required but is strongly recommended.

Course description: This course introduces the modern theory of evolution. This theory emerged in the 1930s and 1940s as a synthesis of genetic knowledge on the basis of inheritance and the Darwinian concept of natural selection. Discussion of the theory of evolution will be partitioned into five major topics:

1. Darwinism and evolutionary thought
2. Principles of phylogenetics and “tree thinking”
3. Mechanisms of evolutionary change
4. Adaptation
5. Speciation and the history of life

The modern paradigm of evolution is often called the synthetic theory because it integrates the contributions of so many fields of knowledge. Accordingly, the ultimate objective of the course will be to bring together prevailing ideas on evolution theory to help you create an informed framework for thought about evolutionary issues in all fields of biological science.

Grading breakdown:

Homework Assignments ~110 pts

In-class clicker quizzes ~80 pts

Exam 1 99 pts (Feb. 6-11)

Exam 2 99 pts (March 4-9)

Exam 3 99 pts (April 6-10)

Final Exam 150 pts (Date and time to be announced)

Total ~640 pts

Grading policies:

Final letter grades assigned on a +/- basis.

Exams and the final will be partially cumulative.

Homework assignments and in-class quizzes: Lectures and assigned reading will be augmented with Blackboard homework assignments and in-class clicker quizzes to assess knowledge of factual information and ability to utilize basic principles to solve complex problems. Each assignment in Blackboard will be available for multiple days and may be submitted twice.

Exams: Exams will be administered at one of the Online Testing Centers on campus. There will be a several day window in which to take Exams 1-3. The final exam will be at a time determined by the Online Testing Center. Each exam may be taken only once. Makeup exams will not be given except on documentation of a valid reason for missing an examination.

Expected learning outcomes: Students will gain an effective understanding of fundamental evolutionary principles, including the unifying role of evolution in biology and how it connects various biological facts and disciplines. Students will be able to apply this knowledge to real world issues affecting their lives, e.g., agriculture, human health, and conservation.

Attendance in lecture: Attendance is not mandatory but students should contact the instructor in a timely manner if unable to attend a number of lectures, or if unable to complete a homework assignment or exam in the time allotted. A valid, documented excuse should be provided.

Conduct in class: Be respectful to your instructor and fellow students. Do not disturb those around you by eating food from loud packaging, shuffling through newspapers, chatting with your neighbor, etc. Use of a laptop to take notes in class is welcome but do not disturb neighbors by surfing the web while they are trying to concentrate on lecture.

Policies: Grades are reduced for academic misconduct, including plagiarism from published sources. The usual policy is to deny credit for the grading exercise in question for the first offense. Second offenses result in a grade of "F" for the course. Disruption of the course, theft of course materials, or interference of the course and the participation of others in it will result in a grade of "F" for the first offense. Students who fail the course for academic misconduct are barred from further course activities in any capacity. All incidents of academic misconduct are reported to the Office of Academic Affairs, and records of the incidents are inserted into the file(s) of the student(s) in question.

Students with Disabilities: Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. All students requesting accommodations are required to meet with staff in Student Disability Resources (SDR) to establish eligibility. A Student Academic Accommodation Request (SAAR) form will be provided to eligible students. The provision of reasonable accommodations in this course will be arranged after timely delivery of the SAAR form to the instructor. Students are encouraged to deliver completed SAAR forms as early in the semester as possible. SDR, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.dso.iastate.edu/dr/. Contact SDR by email at disabilityresources@iastate.edu or by phone at 515-294-7220 for additional information