

Instructor: Prof. Kevin J. Peterson

Meeting time: 12 (MWF 12:50-1:55 LSC 105; X hour Tuesday 1:20-2:10)

Office Hours: By appointment Room 321 LSC

Readings: Journal articles (both background and discussion readings) are uploaded here on Canvas.

Bio 28/Ears 35 concerns itself with thinking about the evolutionary process in a different way, from the perspective of the species and through the lens of deep time. We do not really concern ourselves with the mechanisms of population genetics, which operate at a different scale both spatially and temporally. Instead, what we are ultimately concerned with in this course is whether life is organized hierarchically, and if so, can selection occur at any/all of these other levels, in addition to the level of the organism. This course is especially well suited for discussion and question, as even the definition of macroevolution, and its very existence, is under intense discussion by both microevolutionists and macroevolutionists alike. So - **Ask Lots of Questions!** Most of the fun of this class is the discussions we have as a group, not the lecture material *per se*. Because this course will be asking you to think about Biology and Paleontology in a different way, it is very important that if you don't understand something in class or get behind **Ask For Clarification!**

Generally, each week we will explore a different subject in Macroevolution, with lectures or discussions during normal class time. Background reading(s) for each lecture are posted on Canvas. X hours will be used for either background information on specific phylogenetic techniques or for quizzes.

Lecture 1 (1/3-1/8): Introduction & Hierarchy Theory

Lecture 2 (1/10-1/17): Punctuated Equilibrium

Lecture 3 (1/22-1/24): Species Sorting and Selection

Lecture 4 (1/29-2/7): The Origins of Macroevolution 1. Meiosis

Lecture 5 (2/12-2/14): The Origins of Macroevolution 2. Macrophagy

Lecture 6 (2/19-2/23): The Cambrian Explosion

Lecture 7 (2/26-3/2): Extinction

Final over Topics 1-8 (take home): Sunday March 11th 8:00 AM (rm tba)

There is one take-home midterm and one take-home final that are each worth 35% of your final grade. Rules/restrictions/guidelines will be discussed in class. There are 2 in-class quizzes given during X-hr that will cover all of the material (including X-hours and readings) given during each specified week. Each quiz is worth 15% of your final grade. And of course, the honor principle applies to all of your work. If you are ill (for example) and cannot take a quiz you must make arrangement with me before hand, otherwise you will not earn any credit for the missed quiz. I encourage students with disabilities, including invisible disabilities like chronic diseases, learning disabilities, and psychiatric disabilities to discuss with me after class or during my office hours appropriate accommodations that might be helpful to them.