Professor: Corey Devin Anderson, Ph.D. (Evolution, Ecology, and Population Biology)

Preferred salutation: “Dr. Anderson”

Course overview

This course is an introduction to ecological and evolutionary theory. Although ecology and evolution are presented as separate disciplines, their interaction is emphasized and proficient knowledge of how ecology and evolution interact is a major learning goal and requirement for passing this course.

While the course presents an integrated view of ecology and evolution, in the first half of the class, the focus is on evolution. Macroevolutionary concepts are discussed in detail, but my presentation of the course is admittedly biased towards population genetics and microevolutionary theory. The emphasis on microevolutionary mechanisms partly reflects the fact that this is my area of expertise and I feel most comfortable teaching this material. But more importantly, I believe that a solid background in microevolutionary mechanisms helps to reinforce the connection between heredity (i.e. genetics) and microevolution, as well as the connection between microevolution and macroevolution.

While basic comprehension of biological evolution requires a solid foundation in microevolution, the theory underlying this subject is largely based on probability theory applied to population genetic data. The quantitative nature of the subject makes it challenging for some students and teachers, so it is often underemphasized in most evolution textbooks (usually given a chapter or two, at most). In the present course, by choosing to emphasize microevolutionary theory, I have taken the opposite approach. My hope is that this emphasis will provide my students with a sound understanding of the mechanisms underlying evolutionary change at the most basal level (i.e., the population), and that enhanced training with this subject will put my students at an advantage over others who have received less instruction in this arena. Finally, I would like to note that most of the development of evolutionary biology over the last several decades has been perpetuated by technology breaks in molecular genetics; therefore, students in the modern era need to develop a good grasp of the genetic mechanisms underlying biological evolution.

At a certain point in the course, the focus shifts from evolution to ecology. In teaching ecology, I prefer a hierarchical approach, starting with interactions between individuals in a population (i.e., population ecology) and then subsequently covering interactions between species in a community (i.e., community ecology). However, to facilitate completion of the final paper, I sometimes vary my presentation of certain subjects in ecology, depending on the nature of the course project.

As both ecology and evolution have to be covered in the same semester, there are surely many important subdisciplines and topics in evolution and ecology that are not covered in sufficient detail. Students requiring training in these areas are encouraged to investigate the topics independently, or to seek out more focused courses on these subjects.

It is very important for students in this course to understand that much of the development of ecological and evolutionary theory is based on quantitative models. These quantitative models usually present themselves as equations. However, as opposed to a course in mathematics, the goal is not simply to be able to manipulate and solve the equation, but rather to be able to model the concept. The conceptual nature of the subject represents a departure from the manner in which most biology students have been trained. This challenge is exacerbated by the fact that most students have not had previous training in ecology and evolution. These challenges, combined with the shear breadth of the material, may make this a very challenging course for some students. You are strongly encouraged to "keep up" with th l' Ŕ ˜ ы

that exam. Any student caught photographing an exam will get an automatic "F" in Biology 3250, and will also be banned from retaking the course with Dr. Anderson.

I prefer that my lectures and labs not be recorded (especially without my consent), but if you feel as if you need to record my lecture, please place your recording device in the front of the classroom, so that I am aware that I am being recorded.

Students requiring classroom or testing accommodations because of documented disabilities should discuss their needs with the instructor at the beginning of the semester. Students not registered must contact the Access Office, Farber Hall, Phone; 245-2498. Website: http://www.valdosta.edu/access/