Evolutionary Biology (Biology 420)  
Fall 2012  
Tuesday - Thursday 12:00-12:50, 456 MARB

INSTRUCTORS:

Duke S. Rogers, 647A WIDB, 422-5898. Office Hours Tues. 1:00 – 2:00 p.m. or by appointment. (Duke_Rogers@byu.edu) (see Email policy below)

Graduate Teaching Assistants are Brittany Bush (britbush@gmail.com) and Melissa Coon (melissacoon@comcast.net). Office hours by appointment.

TEXT AND READINGS

Evolutionary Analysis, 3rd or 4th Edition, Scott Freeman and Jon C. Herron (strongly suggested but not required). I will make several copies of this text available on reserve in the library if you really don’t want to purchase the text. However, during peak usage (before mid-term exams) you may not be able to access this book. Specific lecture topics, Power Point presentations and corresponding readings will be available on Learning Suite. No quiz or exam questions will be taken directly from the text. Instead, questions will be drawn from PowerPoint lectures, class discussions, reading/class assignments or handouts.

COURSE PHILOSOPHY

Evolutionary biology is the central unifying discipline in comparative biology. A prominent biologist once stated: “Nothing [in biology] makes sense unless viewed in the light of evolution”. I will do my best to demonstrate why this is so. In your academic career thus far you have taken classes in genetics, molecular biology, ecology, and others. Now it is time for you to ‘put it all together’. I view my role and that of the teaching assistant as facilitators. We will provide you with the background and general resources to develop a depth of understanding for the field of organic evolution. To facilitate this process, you will be expected to develop your reading and writing skills. Reading will take the form articles from the primary literature.

COURSE OBJECTIVES

(1) Develop a better understanding of the LDS position on evolution
(2) Understand the history and context of the national debate on creationism, intelligent design, and evolution
(3) Deepen your understanding of the social and scientific context under which Darwin developed his ideas
(4) Explore the evidence supporting evolution and the rich context it provides for all biological inquiry
(5) Gain a better understanding of basic principles of evolution within a population including selection, drift, and founder effect
(6) Learn the details of phylogenetic reconstruction for deciphering patterns of evolution
(7) Learn the details of species concepts and the criteria used for identifying and diagnosing species
(8) Understand the origin, genetic diversity and diversity of humans
(9) Understand how relatively few changes in genes that affect development can have major evolutionary consequences
(10) Develop “thinking like an evolutionary biologist”

PROFESSIONAL READINGS AND DISCUSSIONS:

Some class time will be taken up by collaborative discourse. Therefore, being prepared to participate in discussions is a class requirement. I expect the class to be interactive and will facilitate this by calling on students to participate in class. Any reading assignments or PowerPoint lectures for a particular week are potential subjects for discussion and questions, so please be prepared when you come to class. This entails having read and thought about the assignment before class. You will be provided with copies of these materials via Learning Suite and you must bring a hard or electronic copy of the reading assignment to class. If you do not, then you are not prepared for class even if you have read the assignment. During our in-class discussions, I will then call on individual students to summarize certain aspects of the assigned papers, text material or a portion of a Power Point presentation (please refer to the handout with the readings for general guidelines to prepare for these discussions). Students will be chosen at random, so that any student could be called on at any time. For papers you have read, you should be prepared to briefly describe the purpose of the paper, the methods used, as well as a summary of the paper’s results and discussion sections. Students should also be prepared to critique the paper (express their views on the strong and weak points of the paper they summarized) or to write short narratives about one of the papers. I will moderate class discussions. The purpose of student presentations and writing assignments is to give you additional incentives for reading the assigned papers. Ask questions. Be curious. Have a different interpretation of a reading than others in the course or me; but please be sure to share your perspective in a productive manner.

WRITING ASSIGNMENTS

1. Writing Assignments – in class: On occasion I will ask you (or a group) to prepare a short commentary on an the assigned reading, a PowerPoint presentation or an assignment covering the topic of discussion for the day’s lecture material. These assignments may be unannounced - you will not know when they will occur. They will be written either at the beginning, during, or at the end of the class period. I will provide you with the question(s), then you will write a response. Typically, time will be limited to 10 minutes to prepare your
narrative. Some of these questions will be read and evaluated by your peers. In addition, I will occasionally have unannounced quizzes, especially if I determine that some students are not coming to class prepared to discuss readings or are unprepared in general. Therefore, it is essential that you review the material covered in the previous lecture so that you are prepared for any unannounced writing assignments or short quizzes.

2. Writing Assignments – outside class: I will ask you to write several times during the semester. Some of these will be summaries of reading assignments or discussion questions. The discussion questions will be counted toward the upcoming mid-term exam. You will prepare your answer and turn it in within a specified time frame as provided by instructions (together with a grading rubric) posted on Learning Suite. I (and/or the teaching assistants) will provide general feedback. We will consider content as well as punctuation and grammar in determining point values for the essay writing assignments. Typically, each writing assignment will be worth 10 points.

ASSESSMENT:

Overall Grade Determination: Grades in this course will be based on scores from three "mid-term" exams (60% total) a series of writing assignments and class participation (40%). A comprehensive final will be offered to those students who wish to improve their scores on one of the mid-term exams. In addition, any student who misses a mid-term exam for a legitimate (University approved absence) must take the final exam to replace the missed mid-term. There will be no opportunity for additional or “extra” credit in this course. I will use the standard university grading scale; there will be no curve in this class. However, to determine course grades at the end of the semester, I will divide your percentage total by the highest grade or percentage in the class. For example, if the highest grade is a 97.3% and your percentage grade is 87.6%, your final grade would be 90.0% (A). Typically, grades are adjusted upwards about this much, but the actual percentage varies a bit from term to term.

Testing: You can expect both objective (multiple choice, fill in the blank, or matching) and short answer or discussion type questions on each exam at ca. 2:1 ratio. The final will include material from the untested portion of the course (about one-third of the point value for the exam), as well as questions of a comprehensive nature covering the entire semester's work. The mid-term exams will be given in the testing center. If you miss one mid-term exam you will be given a comprehensive make-up exam during reading days. If you miss two mid-term exams you will receive a grade of zero for one exam.

Point Changes: All writing assignments and the midterm exams will be graded and returned to you as quickly as possible. After the mid-term exam has been returned and an exam key has been posted on Learning Suite, you will have one
week to check your paper for grading accuracy and turn in a request for a re-grade if necessary. Please follow the format on the “Biology 420: Re-grade Policy and Submission Form” available on Learning Suite. No exams will be accepted for re-grades after the one-week period. However, if you schedule an appointment with me, I will be happy to discuss your exams with you at any time during the semester.

Class Participation: This class is a senior-level, capstone course. Among other things, I expect involvement in class discussion and oral presentations (in fact, this is a part of your grade because if you miss an in-class writing assignment these cannot be made up). Because exams will be based on lecture material, assigned readings, class discussions, as well as in class writing assignments, it will be difficult to do well in this course if you do not come to each class fully prepared to discuss relevant material or for a short writing assignment dealing with material to be covered that day. If you are absent from class, it is your responsibility to obtain lecture notes and inquire about handouts or reading assignments. If you miss a quiz or an in-class writing assignment there is no possibility for a make-up.

ACADEMIC HONESTY

Strict academic honesty is expected in the class, consistent with BYU’s Honor Code. Students are expected to behave ethically and responsibly as scholars, and to behave reasonably in the classroom. All of your work must be your own unless you are specifically requested to work in groups and submit a single group assignment. You may not work together during any in-class quiz, writing assignment or exam – these are intended as individual efforts unless you are specifically asked to work in groups. Any student that I find to be academically dishonest will fail this course. Remember: We believe in being honest, true, chaste, benevolent, virtuous, and in doing good to all men. . . . If there is anything virtuous, lovely, or of good report or praiseworthy, we seek after these things. - THIRTEENTH ARTICLE OF FAITH

REASONABLE ACCOMMODATION

You will not be able to make up any mid-term exams. If you are unable to take one of the midterms for legitimate (University excused absences or professional/job interviews) that you know about in advance, then you must schedule another time to take the mid-term AT LEAST TWO WEEKS PRIOR TO WHEN IT IS SCHEDULED IN THE TESTING CENTER. If this does not occur, then you will be required to take a comprehensive final exam that will substitute for the missed midterm. If you miss any in-class writing assignments and your absence falls under the University-excused guidelines, then that absence will not be counted against you. Please inform Brittany in advance of your absence; she will keep track of them. Any student in this class who has a disability that may prevent you from fully demonstrating your abilities should contact me personally as soon as possible so that we can discuss accommodations necessary to ensure full participation and facilitate your educational development.
Note: I view this syllabus as a contract. However, I reserve the option to make changes in the syllabus and subsequent attachments as necessary.

OTHER COURSE POLICIES

Communication via Email: Email is for emergencies, setting up an appointment, or for questions that require short answers. The first line in your message should include the course number and subject of your email. Including the course number and subject will facilitate my ability to answer your question more expeditiously. Please only ask questions that require brief answers via email and ask complex questions after lecture or schedule an appointment with me.

Use of Electronic Devices: If you use a computer, tablet or phone in class it must be for purposes relevant to the course. All cell phones and other noisy devices are to be turned OFF or to a silent setting. Cell phone usage, texting, IM-ing, tweeting, checking email, etc. is not acceptable at any time during class. You will be given a reminder for the first violation, a second violation will result in a 20 point deduction from the total course points (1000 point maximum), a third violation will result in 50 points deducted from your grade and you will no longer be allowed to use electronic devices in my class.