Biology 3600 A: Introduction to Evolutionary Biology
Syllabus Fall 2014

Class time: TR, 9:35 – 10:55 AM
Location: Instructional Center 209

Instructors and contact information:
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Office hours: By appointment

General Information

Goals: To gain a comprehensive knowledge of evolutionary biology. This includes focus on processes (e.g., natural selection, genetic drift) and resulting patterns (e.g., genome organization, phylogeny, and the fossil record). Emphasis will be placed on a conceptual understanding of the subject with examples taken from the recent primary literature.

***Textbook*:** Evolution (Making Sense of Life), Carl Zimmer and Douglas Emlen

Honor Code: Students are expected to abide by the Academic Honor Code (viewed online at http://www.registrar.gatech.edu/rules/18.php).

Exams: There will be four exams during the semester. Exams may consist of multiple choice, short answer, and/or essay questions. Questions will be taken from assigned readings and class lecture. You are responsible for material covered in assigned readings even if it is not presented in class; similarly you are responsible for material presented in class even if it is not in the textbook. There will be no make-up exams, unless the absence is excused by the Dean of Students. Exams will typically be worth 100 points.

Problems/Essays: In addition to exams, students will complete a problem set or essay associated with the first half of the class (i.e., a set of problems prior to Test 1, an essay or set of short answer questions prior to Test 2). Submission of completed problem sets will receive 25 points each (total 50 points). Note that the problem sets may not be graded in the same detailed oriented manner as the midterms, but the submission is required for the points. Late submissions will receive zero points.

Group Presentation: Our project in Evolution class will be a group work on interesting questions related to the lectures during the semester. This project presentation of will be graded by your peers as well as the instructor, and it is worth up to 50 points. We will have about 8 groups with ~5 students each and your presentation should take about 10 minutes, at the beginning of the class. More details about group presentations will follow in the first day of classes.
Presentation grading rubric will be posted on the T-square, under resources.

Class Participation: In addition, students will have in-class activities and class participation worth up to 100 points. Some of these will involve the use of clickers.

***Total* possible points in the class:** 600.

***Grading*:** Grades will be assigned at the end of the semester as follows:
A = 90 to 100%; B = 80 – 89%; C = 70 – 79%; D = 60 – 69%; F = < 60%. The grading criteria may change. You may request that any question on any exam be re-graded, however, we reserve the right to re-grade the entire exam. Unfair questions will be identified based on the class results; if more than 85% of students incorrectly answer a question, the question may be dropped from the exam at our discretion. Historically, final grades have been adjusted 2-5 points.

Attendance: Performance in this class correlates strongly with attendance in lecture. Students who anticipate the necessity of being absent from class because of religious observance must provide written notice of the date(s) by the fourth class meeting. Some of the lecture materials will be made available on T-Square.

Recitation: During the semester, students will have an additional opportunity to master the key concepts in Evolutionary biology, by participating in additional learning activities during recitations. Recitation will be announced in the class and on the T-square.

How *do you get an A in Evolution?* Read, read, and read all the materials, come to the lectures and recitations. Ask questions and discuss topics in class. Understand concepts and how they are applied rather than memorizing names or formulas. Take careful notes and review them regularly, perhaps in small study groups. This class will be different from any other classes you have taken: you will not get good grades if you just memorize the material without understanding conceptual aspects of this field. Good Luck!

Detailed Schedule:

Date	Topic and Reading	Instructor	Remarks
August 19	Introduction: Syllabus, Text, Planning	MMB/SY	
August 21	How Scientists Study Evolution (Ch.1)	MMB	
August 26	From Natural Philosophy to Darwin (Ch.2)	MMB	
August 28	Geology and Paleontology (Ch.3)	MMB	
September 2	The tree of Life (Ch.4)	SY	
September 4	The Tree of Life, continued (Ch.4)	SY	
September 9	Heritable Variation Among Individuals (Ch.5)	SY	
September 11	Midterm 1	MMB/SY	
September 16	Genetic Drift and Selection/ Part I (Ch. 6)	SY	
September 18	Genetic Drift and Selection/ Part II (Ch. 6)	SY	
September 23	Quantitative Genetics (Ch. 7)	SY	
September 25	Natural Selection (Ch. 8)	SY	
September 30	The History of Our Genes/ part I (Ch. 9)	SY	Presentation
October 2	The History of Our Genes/ part II (Ch. 9)	SY	Presentation
October 7	Midterm 2	DS	
October 9	Evolution of Life History (Ch. 12)	MMB	
October 14	***Fall Recess***		
October 16	Origin of Species (part I, Ch. 13)	MMB	Presentation
October 21	Origin of Species (part II, Ch. 13)	MMB	Presentation
October 23	From Genes to Traits (part I Ch. 10)	SY	Presentation
October 28	From Genes to Traits (part II Ch. 10)	SY	Presentation
October 30	Evolution of Sex (part I Ch. 11)	MMB	Presentation
November 4	Sexual Selection (part II Ch. 11)	MMB	Presentation
November 6	Midterm 3	MMB	
November 11	Macroevolution (Ch. 14)	MMB	
November 13	Coevolution (Ch. 15)	MMB	
November 18	Evolution of Behavior (Ch. 16)	MMB	
November 20	Human Evolution (part I Ch. 17)	MMB	
November 25	Human Evolution (part II Ch. 17)	SY	
November 27	***Thanksgiving break***		
December 2	Evolutionary Medicine (Ch. 18)	MMB	
December 4	***Last day of class and Final exam review***	MMB	
TBA	Final Exam	MMB/SY	

This syllabus is subject to change!