

Biology 3600 / 6600 Evolution  
Tentative schedule, Fall 2008  
Class time: TR, 12:05PM-1:25PM  
Location: Room B6A Boggs Building

**Instructors:**

Soojin Yi, IBB 3302, [soojin.yi@biology.gatech.edu](mailto:soojin.yi@biology.gatech.edu), (404) 385-6084  
Linda Green, CE A104, [Linda.green@biology.gatech.edu](mailto:Linda.green@biology.gatech.edu), (404) 385-6517  
Elena Antonova (TA), IBB 2217, [eantonova3@gatech.edu](mailto:eantonova3@gatech.edu), (404) 385-6197, R 4-6 PM

**General Information**

*Goal:* 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, the fossil record). Emphasis will be placed on a conceptual understanding of the subject with examples taken from the recent primary literature.

*Textbook:* *Evolutionary Analysis, 4th Edition*; S. Freeman and J.C. Herron, 2007

*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 three exams during the semester and a cumulative final (this will focus on material from the last fourth of the course, plus a smaller portion of cumulative questions). 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. Exams will typically be worth 100 points, with the final exam worth from 150-200 points.

*Policy for exam absence:* All absences will be graded as zero except those excused by the instructors prior to the exam day (allowable for only one exam). For an excused absence, you will be given a make-up exam within 72 hours. You will not be excused for two or more exams.

*Sudden illness:* A doctor's note needed for verification.

*Other absence:* Notification from the Dean of Students.

*Problems/Essays:* In addition to exams, students will complete a problem set or essay associated with each fourth 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 20 points each (total 80 points). Note that the problem sets will not be graded, but the submission is required for the points. Late submissions won't count. The TA will go over these problem sets during office hours.

*Grading:* Grading will be assigned 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.

*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.

*Tech gadget policy:* cell phones and laptops are not permitted during the class. For exams, you will need simple calculators (no cell phone, blackberries or other smartphones allowed).

*How do you get an A in Evolution?* Well, do study for it. Read, read, and read all the materials, and actively participate in lecture. Ask questions and discuss topics in class. Understand the concepts and how they are applied rather than memorizing facts or formulas. Take careful notes and review them regularly, we strongly encourage you form a small study group to regularly review material. This class will be different from many other classes you have taken: you will not achieve a high grade if you only memorize the material without understanding conceptual issues. We will challenge you to 'think'! Good luck!!

**Schedule (this syllabus is subject to change!)**

<b><u>Date</u></b>	<b><u>Topic</u></b>	<b><u>Reading</u></b>
Wk1: August 19	Course Intro.	
Wk1: August 21	Evolution and HIV	Ch. 1
Wk2: August 26	Estimating Evolutionary Trees	Ch. 4
Wk2: August 28	Principles of Natural Selection	Ch. 3
Wk3: September 2	Mutation and Genetic Variation	Ch. 5
Wk3: September 4	Effect of Natural Selection on Allele Frequency	Ch. 6
Wk4: September 9	Genetic Drift and Allele Frequency	Ch. 7
Wk4: September 11	EXAM 1	Ch. 1-7
Wk5: September 16	Other Factors on Allele Frequency and $N_e$	Ch. 7
Wk5: September 18	Selection and Drift: Recap	Ch.5-7
Wk6: September 23	Linkage Disequilibrium	Ch. 8
Wk6: September 25	Advantage of Sex	Ch. 8
Wk7: September 30	Quantitative Genetics I	Ch. 9
Wk7: October 2	Quantitative Genetics II	Ch. 9
Wk8: October 7	Phylogenomics	Ch. 15
Wk8: October 9	EXAM II	Ch. 5-9, 15
Wk9: October 14	School Holiday	
Wk9: October 16	Testing Adaptive Hypotheses	Ch. 10
Wk10: October 21	Sexual selection I	Ch. 11
Wk10: October 23	Sexual selection II	Ch. 11
Wk11: October 28	Kin Selection and Social Behavior	Ch. 12
Wk12: October 30	Aging and Life Histories	Ch. 13
Wk12: November 4	Human Health	Ch. 14
Wk13: November 6	EXAM III	Ch. 10-14
Wk13: November 11	Speciation I	Ch. 16
Wk14: November 13	Speciation II	Ch. 16
Wk14: November 18	Origin and Cambrian Explosion	Ch. 17, 18
Wk15: November 20	Cambrian Explosion	Ch. 18
Wk15: November 25	Development and Evolution	Ch. 19
Wk16: November 27	School Holiday	
Wk16: December 2	Development and Evolution	Ch. 19
Wk16: December 4	Human Evolution	Ch. 20
December 12	FINAL EXAM, 8:00-10:50 AM	all ch., emphasis on Ch 16-20