

Biology 3600 A: Introduction to Evolutionary Biology Syllabus Spring 2016

Class time: M, W, F from 9:05 - 9:55 AM
Location: Weber SST III

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. After this course students should have deeper understanding of evolutionary biology and its applications.

Textbook required: Evolution (Making Sense of Life), Carl Zimmer and Douglas Emlen, Second edition

Optional resource: Perkins study guide (to accompany the book)

Honor Code: Students are expected to abide by the Georgia Tech Academic Honor Code and Student Code of Conduct, available online at www.honor.gatech.edu.

Learning Accommodations: If needed, we will make classroom accommodations for students with disabilities. These accommodations must be arranged in advance and in accordance with the <http://disabilityservices.gatech.edu/>

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.

Homework and activities:

In addition to exams, students will have active learning activities in and outside of the class. These would promote better connections between scientific literature and the evolutionary theory. The activities include written (problem sets, in class quizzes) and oral assignments (class discussion). Problem sets and quizzes are worth 50 points.

Participation: In-class activities and class participation are worth up to 50 points. Some of these will involve the use of clickers and/or Learning Catalytics.

Total possible points in the class: 500.

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 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
January 11	Introduction: Syllabus, Text, Planning	MMB/JTS	
January 13	The Whale and the Virus (Part I Ch.1)	JTS	
January 15	How Scientists Study Evolution (Ch.1)	JTS	
January 18	Martin Luther King day		No class
January 20	From Natural Philosophy to Darwin (Part I Ch.2)	MMB	
January 22	From Natural Philosophy to Darwin (Part II Ch.2)	MMB	
January 25	Geology and Paleontology (Part I Ch.3)	JTS	
January 27	Geology and Paleontology (Part II Ch.3)	JTS	
January 29	The Tree of Life (Part I Ch.4)	JTS	
February 1	The Tree of Life (Part II Ch.4)	JTS	
February 3	Midterm 1	JTS	
February 5	Raw Material (Part I Ch.5)	JTS	
February 8	Raw Material (Part II Ch.5)	JTS	
February 10	Genetic Drift and Selection (Part I Ch.6)	JTS	
February 12	Genetic Drift and Selection (Part II Ch.6)	JTS	
February 15	Beyond Alleles (Part I Ch.7)	MMB	
February 17	Beyond Alleles (Part II Ch.7)	MMB	
February 19	Natural Selection (Part I Ch.8)	MMB	
February 22	Natural Selection (Part II Ch.8)	MMB	
February 24	Midterm 2	JTS	
February 26	The History of Our Genes (part I Ch.9)	JTS	
February 29	The History of Our Genes (part II Ch.9)	JTS	
March 2	From Genes to Traits (Part I Ch.10)	JTS	
March 4	From Genes to Traits (Part II Ch.10)	JTS	
March 7	Evolution of Sex (Part I Ch.11)	JTS	
March 9	Evolution of Sex (Part II Ch.11)	JTS	
March 11	After Conception (Part I Ch.12)	MMB	
March 14	After Conception (Part I Ch.12)	MMB	
March 16	The Origin of Species (Part I Ch.13)	MMB	
March 18	The Origin of Species (Part II Ch.13)	MMB	
March 21-25	Spring break		No classes
March 28	Midterm 3	JTS	
March 30	Macroevolution (Part I Ch.14)	MMB	
April 1	Macroevolution (Part II Ch.14)	MMB	
April 4	Intimate partnerships (Part I Ch.15)	MMB	
April 8	Intimate partnerships (Part II Ch.15)	MMB	
April 11	Evolution of Behavior (Part I Ch.16)	MMB	
April 13	Evolution of Behavior (Part II Ch.16)	MMB	
April 15	Human Evolution (Part I Ch. 17)	MMB	
April 18	Human Evolution (Part II Ch. 17)	MMB	
April 20	Evolutionary Medicine (Part I Ch. 18)	MMB	
April 22	Evolutionary Medicine (Part II Ch. 18)	MMB	
April 25	Last Day of Class/review	MMB	
April 29	Final Exam (11:30- 12:30)	MMB	

This syllabus is subject to change!