

BIOE 109 EVOLUTION • Summer 2016

Earth & Marine Sciences B206

Course Description: An examination of the history and mechanisms of biological evolution. Topics include molecular evolution, natural and sexual selection, adaptation, speciation, biogeography, and macroevolution.

Instructor

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Office hours: T/TH after lecture in EMS cafe

Teaching Assistant

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Office Hours: by appointment

Required Text:

Evolutionary Analysis, 4th ed by Freeman & Herron

Recommended Texts:

Origin of species (1st edition!) by Charles Darwin

The Selfish Gene by Richard Dawkins

Readings for each week will typically include one or more chapters from the text plus one scientific paper from the primary literature which will be available on the course eCommons page. The primary literature readings will be discussed during lecture and it is critically important that you keep up with the readings. This class is built on a model of sustained effort and participation, as reflected in the grading breakdown (see below). Cramming interspersed with periods of inactivity will not be a successful strategy.

Course Website: we will be using the Bioe 109 eCommons page for all course communications

Academic integrity: Cheating will not be tolerated. Cheating during tests will result in a zero and may result in a failing grade in the class. By enrolling in the university, students are automatically agreeing to abide by policies, including those on academic misconduct. Academic integrity and scholarship are core values that should guide our conduct and decisions as members of the UCSC community. Plagiarism and cheating contradict these values, and so are very serious academic offenses. Penalties can include a failing grade in an assignment or in the course, or suspension or expulsion from the university. Students are expected to familiarize themselves with and follow citation practices (<http://nettrail.ucsc.edu/ethics/index.html>) and the university's Rules of Conduct regarding student conduct and discipline: <http://www2.ucsc.edu/judicial/handbook.shtml>.

Classroom Accommodations: UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first week of the Summer quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

Grading: Lecture Participation (5 points), 3 Weekly Quizzes (30 points), Final Exam (30 points), Writing assignment (35 points total, incl. 1st draft: 10 pts, peer review: 10 pts, & Final draft: 15 pts)

Tentative Course Schedule

Week	Lec	Date		Lecture Topic	Lecture Activity	Textbook Readings	Assignments
1	1	26-Jul	Intro	What is Evolution?: Biology, History, & Society Review: Basic transmission genetics		Ch 2- 3	
	2	28-Jul	Microevolution: Selection, Drift, Mutation, & Migration	Mechanisms of Evolution & Population Genetics	Scientific Writing	Ch (5),6,7	
2	3	2-Aug		Quantitative genetics & the evolution of phenotypes	Paper Discussion: Vignieri et al. 2010	Ch 8-9	Quiz #1 in class
	4	4-Aug		Evolution of life history & parental care Kin Selection	Field Trip: Kin Selection in Ground Squirrels	Ch 12-13	
3	5	9-Aug	Macroevolution: Speciation & Extinction	Evolution of Sex: Causes & Consequences (Meet at Hort 2 classroom in arboretum)	Field trip: Sexual Selection of hummingbirds	Ch 11	FIRST DRAFT DUE
	6	11-Aug		Species & Speciation Tree of Life & Phylogenies	Paper Discussio: Heath et al. 2003	Ch 4,16	Quiz #2 in class
4	7	16-Aug	Macroevolution: Speciation & Extinction	History of Life	Paper Discussion: Barluenga et al 2006	Ch 17-18	PEER REVIEW DUE
	8	18-Aug		Coevolution; Evolution & Development		Ch 19	Quiz #3 in class
5	9	23-Aug		Human Evolution; Evolutionary Medicine	Paper Discussion: Bramble et al. 2004	Chs 1, 14, 20	FINAL DRAFT DUE
	F	25-Aug		FINAL EXAM			