Evolution
Bi 358 CRN 10417
Fall 2013

Instructor: Dr. Susan Masta; email smasta@pdx.edu; office ph (503) 725-8505
Office hours: Room 531A SB1 Mondays 4-5 pm, Thursdays 6:30-7:30 pm
Class meets: 4:40 - 6:30 pm Tuesdays and Thursdays in PNT 102
Required Materials: Textbook *Evolutionary Analysis* by Jon Herron and Scott Freeman, 5th edition, 2013 Prentice Hall. Available in hard copy or as an ebook. (4/E, 2007 is acceptable for much of the content)
Desire2Learn will be used to post some material, and for you to answer assignment and quiz questions. You will need an active Odin account. If you need assistance with Odin or D2L, contact the OIT Helpdesk (phone 503-725-HELP (4357); email help@pdx.edu; or in person in room 18 SMSU.)

Learning Objectives: In this course, you will:
- Gain a broad overview of evolutionary theory
- Become familiar with the ways in which genes and phenotypic traits change over generations
- Understand the many applications of evolution that impact our daily lives
- Gain an understanding of the evolutionary history of life on Earth

Skills Development: In this course, you will develop skills that will allow you to:
- Understand and interpret biological phenomena in an evolutionary framework
- Make inferences about how populations evolve
- Interpret and evaluate scientific literature pertaining to evolution
- Discuss and clearly explain scientific concepts

Grading Scheme: Your grade will be based on 2 exams (30% and 35% respectively), one quiz on D2L (10%), and answers to questions on 5 assigned articles for discussion (25%). There will be no make-up exams without prior approval, and all make-up exams will be essay-style. At the end of the term, after the final exam has been graded, the class scores will be scaled such that the student with the highest number of points receives 100%. You will receive at least the following grades if your cumulative scores, after scaling, are: 95-100% = A; 90-94% =A-; 87-89% = B+; 82-86% = B; 80-81% = B-; 77-79% = C+; 72-76% = C; 70-71% = C-; 67-69% = D+; 62-66% = D; 60-61% = D-; ≤ 59% = F.

Exams: The 2 exams will be multiple-choice (using scantrons). The second (final) exam will cover primarily material from after the 1st exam, but is partially cumulative, as you will be expected to be familiar with evolutionary concepts built upon throughout the term. The online quiz will follow a format similar to the exams. The quiz and exams will be based on all the material covered in lecture (including special presentations, videos, etc). The lectures will cover the concepts in the textbook, other assigned readings, and current research in evolutionary biology. If an assigned textbook chapter contains a topic that was not covered in lecture, you will not be responsible for it on the exam.

Discussion reading assignments and questions: Reading assignments must be completed before class, so that you come to class prepared to discuss the article. The in-class discussions should allow you to better understand the evolutionary topic of the article, in addition to the scientific process. You will need to answer questions that will be posted on Desire2Learn within a 24-hour period after the in-class discussion.

Accommodations: Accommodations are collaborative efforts between students, faculty and the Disability Resource Center (DRC). Students with accommodations approved through the DRC are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through the DRC should contact the DRC immediately at 503-725-4150.

Academic honesty and code of conduct: it is each student's responsibility to follow the PSU Student Code of Conduct which can be found at: http://www.pdx.edu/dos/psu-student-code-conduct

Syllabus

Date	Topic	Textbook Chapters	Assignment
1 October	Introduction to Evolution	Sections 1.1-1.3; Chapter 10	
3 October	Evolutionary Trees	Section 1.4; Chapter 4	
8 October	Natural Selection	Chapter 3; Vilà et al. 2001	answer questions about Vilà et al. 2001
10 October	Genetics of Populations; Selection and Mutation	Chapter 6	
15 October	Evolution in Finite Populations; Genetic Drift, Coalescence	Sections 7.1-7.4	
17 October	Molecular Evolution and the Neutral Theory	Section 7.3	
22 October	Evolution at Multiple Loci; Linkage Disequilbrium	Sections 8.1-8.2; Wang et al. 1999	answer questions about Wang et al. 1999
24 October	Quantitative Genetics and Heritability	Sections 9.1, 9.3-9.6	
29 October	The Evolution of Sex	Section 8.3	Exam 1 (through 24 Oct)
31 October	Sexual Selection	Chapter 11; Hauber 2007	answer questions about Hauber 2007
5 November	Sociality: Kin Selection, Behavior	Chapter 12	
7 November	Aging and Life History Evolution	Chapter 13 Lukas & Clutton-Brock 2013	answer questions about Lukas & Clutton-Brock 2013
12 November	Evolution and Medicine	Chapter 14;	
14 November	Mechanisms of Speciation	Chapter 16	Online quiz (material through 12 Nov)
19 November	Origin of Life; Major Transitions	Sections 17.1,17.3, 18.1	
21 November	Fossil Record and Extinctions	Chapter 18	
26 November	Human Evolution	Chapter 20 Krause et al. 2010	answer questions about Krause et al. 2010
28 November	**PSU closed: Thanksgiving**		
3 December	Transposable Elements and Genome Evolution	Section 15.2; Biémont & Vieira 2006	
5 December	Genome Evolution	Chapter 15	

****Final Exam (exam #2) is Tuesday, 10 December 2013 from 5:30-7:20 pm****