Foundations III: Evolution and Biodiversity Biology 253 – Spring 2007 MWF 10:00-10:50, McKenzie 221 Labs: Tuesday and Thursday, Klamath 21

Instructors:

Lecture:	William Cresko, Pacific 312, 346-4779 Email – wcresko@uoregon.edu)
Lab:	Carl Stiefbold, Klamath 19, 346-4537 Email – cstiefbo@uoregon.edu	
TAs:	Bryn Gaertner, GTF Email – bgaertne@uoregon.edu Laurel Hiebert, Peer Tutor Email – <u>lhiebert@uoregon.edu</u>	Erin Sanders, GTF Email – esander1@uoregon.edu Suzanne Wise, Peer Tutor Email – swise1@uoregon.edu
Textbook:	Freeman, <i>Biological Science</i> (2 nd), vol	2 Evolution Diversity and Ecology, Prentice Hall.

Supplement: Griffiths et al., Introduction to Genetic Analysis, Freeman (from Bi 252)

Website: On Blackboard (blackboard.uoregon.edu)

Course Description: This is the third of three courses in the Foundations Introductory Biology sequence. The course will address ecological processes, the mechanisms of evolutionary change and the diversity of life on earth. The focus is on shared genetic, molecular and developmental features of organisms and the ecological context in which they live.

Prerequisite: Bi 252, Foundations II, Genetics and Molecular Biology

Laboratories: Laboratories are held on Tuesdays and Thursdays, and last 2 hours and 50 minutes. **You must be registered for the lecture and a laboratory section for this course**. If you are unable to register for a laboratory section that fits your schedule, register for any section that is open and we will make accommodations for you in an appropriate section. Don't bother trying to change sections through Duck Web or the registrar. A required laboratory manual is available at the UO Bookstore. You must bring it to the laboratory every week.

Field Trip: There is a field trip to the Oregon Institute of Marine Biology on **Saturday, May 12th**. You should report to the Facilities Services parking lot (off of Onyx, north of Franklin) at 7:45. We will be returning later that evening. Please wear clothing appropriate for fieldwork at the coast. This is a required fieldtrip, although students who have a legitimate conflict can write a research paper as a substitute. A request for the alternative project must be filed with Carl two weeks before the field trip. Students who miss the field trip without prior authorization for the alternative project will receive zero credit for that lab.

Attendance: Attendance to the lectures is strongly recommended. Past experience shows that students who do not attend classes perform poorly on exams. The single most important thing that you can do to succeed in this class is to attend lectures and then review and outline the material presented, incorporating your textbook and outside reading. You will be responsible for assigned reading not covered in the lecture when that material is highlighted at the beginning of lecture. Please make a strong attempt to arrive at

class before lecture starts and do not disturb other students during lecture. Disturbance by cell phones will not be tolerated and can result in a loss of points in the class.

Calculator: You will need a non-programmable calculator capable of calculating logarithms for use during exams.

Exams and Grading: There will be two one-hour midterm exams (**7 PM on Wed 4/25 and Wed 5/16**) and a 2-hour comprehensive final exam. All exams are closed book. The total points for the lecture component of the course will be calculated in two ways:

Method 1		
Midterm exam	s(100 + 100)	= 200 pts
Final exam		= 200 pts
Method 2		
Best Midterm	(100 x 1.33)	= 133 pts
Final exam	(200 x 1.33)	= 267 pts

The exams will account for 60% of your Bi 253 grade, with the remaining 40% contributed by laboratory assignments (267 points). Letter grades are determined by a curve using the method that yields the highest score. Letter grades are determined for only the cumulative score, not for individual exam scores.

P/N option: a grade of "P" is given when the calculated grade is "C-" or better; a grade of "N" is given when the calculated grade is "D+" or lower.

If you wish to have an exam answer re-graded, you should attach a written statement to the exam explaining *specifically* why your answer merits a higher score, and submit both the exam and the statement to us within a week of your receiving the graded exam. Keep in mind that a re-grade may result in a higher, lower, or unchanged score. *Please do not abuse this system. We reserve the right to eliminate this option at our discretion.*

No make-up exams will be administered. When you sign up for this class you are responsible for knowing the dates of the exams. If you miss an exam for a <u>valid</u> reason, you must see the instructor to determine your grade.

Students with Disabilities: If you require an accommodation based on disability, I would like to meet with you in the privacy of my office the first week of the term to be sure you are appropriately accommodated.

Academic Dishonesty: It is the philosophy of the University of Oregon that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Lecture Schedule

Wk	Date	Lecture Topics	Reading
1	4/2	Gene regulation during development	F 470-478
	4/4	Hox genes and the determination of body plan	G 591-602
	4/6	Cell signaling: Hedgehog	
2	4/9	Cell signaling cont.	
	4/11	A brief history of (biological) time	F 563-569
	4/13	Phylogenetic thinking	F 556-561
		The three domains: rise of the archaea	F 592-598
3	4/16	Eukaryotes and endosymbiosis	F 607-626
	4/18	The Cambrian explosion: metazoan body plans	F 698-709
	4/20	Modes of development	F 453-466
4	4/23	Vertebrate evolution: genomes and jaws	F 749-762
	4/25*	Flower development and diversity	F 478-481
	4/07		F 657-661
-	4/27	Plant diversity	F 637-656
5	4/30	Ecology: population dynamics	F 1196-1202
	5/2	Population regulation	
	5/4	Population regulation	F 4044 4000
6	5/7	Species interactions	F 1214-1228
	5/9	Ecosystem structure	F 1243-1252
	5/11	Biodiversity and its loss	F 1265-1281
	5/12	(Saturday) Field trip to OIMB	- - - - - - - - - -
1	5/14	Natural selection and genetic variation	F 503-509
	5/16*	Selection in hanloids	1 321-327
	5/18	Evolution in action: HIV	
8	5/21	Genetic variation and genetic drift	F 516-520
		Conolio vanalion and genelio ant	F 527-535
			G 621-624
	5/23	Selection in diploids	F 440-445
	5/25	Soloction in diploide	G 629-633
9	5/28	Memorial Day – No classes	
Ũ	5/30	Patterns of speciation	
	6/1	Mechanisms of speciation	F 538-553
10	6/4	Human evolution	F 773-778
	6/6	Human variation and disease	
	6/8	Wrap-up and review	
	6/11	FINAL EXAM (Monday) – 10:15 AM	

* Hour exams: 7 PM, location TBA

F = readings from Freeman, *Biological Science* (2nd ed) G = readings from Griffiths et al., *Introduction to Genetic Analysis* (δ^{th})