

Evolutionary Biology BIO 429/529

Spring 2009 Syllabus

Instructor: Dr. Kathryn E. Perez

Office: 3009 Cowley Hall, 785- 6998

Office Hours: Tuesday 9:30-10:30 p.m., Wednesday 11:00 a.m. - noon, Friday 11:00 a.m.- noon.

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Lecture times: Monday, Wednesday, Friday 1:10 – 2:05 p.m. Cowley Hall Room 0405.

Course Purpose and Goals:

1. Learn the basic terminology used by evolutionary biologists.
2. Develop an understanding of how living organisms survive and adapt to their surroundings.
3. Learn and apply the fundamental concepts of Evolutionary Biology and explain to the non-scientist the mechanisms of evolution and the unifying nature of Evolution in Biological fields.
4. Explain, for any aspect of biology Dobzhansky's maxim "nothing in Biology makes sense except in the light of Evolution".
5. Write essays on the influence of Evolutionary Biology in your chosen field of study demonstrating clear and critical thinking and logical organization of arguments.
6. Learn to think like an evolutionary biologist by analyzing and interpreting experimental data.

Approaches And Expectations:

This course uses forms of problem-based learning. This approach is not only useful in understanding how science is practiced, but can be applied to solving problems in other disciplines. You are responsible for all material covered in class, homework assigned, and any changes announced in exam dates.

Participation & Learning Environment – One of my goals for this class is to make it interactive. In the process of debating difficult issues, you are expected to participate in these activities in a way that is respectful to yourself, your classmates, me, and our learning environment. I will not tolerate disrespect towards anyone in any form in the classroom.

READINGS:

Textbook: Evolution, by Douglas J. Futuyma, 1st edition, 2005. Obtain from Textbook Rental. The text serves as source for further explanation of the topics covered in lecture.

Additional readings: You are responsible for additional readings that will be announced in class and on the D2L site.

Access for All Students:

Any student with a documented disability (e.g., physical, learning, psychiatric, vision, or hearing, etc.) who needs to arrange reasonable accommodations must contact the instructor and the Disability Resource Services Office (165 Murphy Library) at the beginning of the semester. I am happy to make reasonable accommodations for students with special needs.

Grading:

Your grade is based on total points earned, meaning that it is theoretically possible for everyone to get an A. The types of assignments and their point values are summarized in the table below. Your final grade in the course will be determined by dividing the total points you earn by 555 (the total possible points in the course) and multiplying by 100. Your percentage will determine your final letter grade as indicated.

Type of assignment	Point Value	Grade	%	Points
3 Lecture exams @ 75 points each	225	A	92 – 100	508-555
Writing Assignment & Writing Critiques	30	AB	88 – 91	486-507
5 Simulation Exercises (@ 20 pts each)	100	B	81 – 87	447-485
Final Group Project Written	75	BC	77 – 80	425-446
Final Group Project Oral Presentation	25	C	67 – 76	370-424
Comprehensive Final	100			
Total Possible Points	555	D	55 – 66	303-369
		F	0 - 55	0-302

Lecture Exams:

225 points: There will be three lecture exams during the semester. Each will be worth 75 points. These exams will be in multiple choice, short answer, and long essay format. Because we are working toward developing your *understanding* of the field of evolutionary biology, the questions will frequently involve problem solving, interpretation of passages of reading, and the application of knowledge.

If you must miss an exam because of an illness or an officially approved university activity, you must contact me before the exam. If an emergency makes this impossible, you must inform me within 24 hours after the exam. In any case, be prepared with official documentation of the reason that forced you to miss the exam. **Without proper notification and documentation, you will receive a zero on the exam that you miss.**

Writing Assignments:

30 points: There is one individual writing assignment. Detailed instructions for this assignment will be given in class and on D2L.

Group Project:

100 points: You will be assigned to a group that will spend the latter half of the semester designing a laboratory exercise that illustrates basic evolutionary principles at a level appropriate for an introductory biology course. You will turn in a written laboratory report ready to hand out to students for grading and suggestions. During the last week of labs each group will teach this 1 hour laboratory exercise to the BIO105 students in their laboratory time. The grade on this project is mostly based on the written laboratory each group designs, but some points will come from the execution of the laboratory exercise and will be graded by me, and/or the graduate teaching assistant who is responsible for the lab.

Computer Simulation Assignments:

100 points: During each computer lab session, you will have a worksheet and/or assignment to complete. Some may be completed during the classroom period, while others must be turned in on a specified day and time (usually 1 week from the lab day). ULW Biology has purchased the appropriate software for each of you to use in lab and take home and work with independently. Some software is available free online as well. The programs will also be installed in the Murphy Library Computer lab so you can use them there. As with all assignments, these assignments will not be accepted past the due date, unless you provide me with official documentation (medical, legal, letter from the Dean, etc.) regarding your absence or tardiness. (*throughout semester*)

Final Exam:

100 points: There will be a **comprehensive** final exam covering all lectures and assigned readings on **Monday, May 11, 2:30-4:30 pm.** **This date is firm. You are required to take the final at this given time slot by the university.**

Academic Honesty:

There is a student honor code at the University of Wisconsin-La Crosse that I expect to be upheld (pg. 45 in the Undergraduate Catalog or go to <http://www.uwlax.edu/StudentLife/uws14.html>). Cheating and plagiarism will not be tolerated in any aspect of this course. Plagiarism is taking someone else's ideas, expressions, or productions and passing them off as your own. Please visit the following Murphy Library web site for more information on plagiarism: <http://www.uwlax.edu/murphylibrary/plagiarism.html>. This library web site connects you to some specific examples of what is and is not plagiarism.

E-mail:

I will e-mail announcements to you using the distribution list for this course. Thus, **you must use your campus e-mail account**. Your email address is the first 8 letters of your last name and the first 4 letters of your first name followed by @students.uwlax.edu.

E-mail etiquette: Please remember basic rules of communication etiquette. For example, do not start your email message to your any of your instructors as follows: "Hey...I missed class today...can you tell me if I missed anything important?" Your email should include a proper address to the instructor (i.e. Dear Dr. or Professor).

Furthermore, given the great number of students enrolled in this class, please only ask questions that your classmates cannot answer for you. It is YOUR responsibility to get the notes and assignments from one of your peers.

BIO 429/529, Spring 2009 – Tentative Topic Schedule

Date	Weekly Reading	Topic	Summary of Assignments
Jan 26, 28, 30	Ch.1	Introduction: Relevance of Evolution - What is Evolution? History of Evolutionary Ideas	Reading: For discussion on Friday read Science article on antibiotic resistance.
Feb 2, 4, 6	Ch 8,9, 10	Origin of Genetic Variation/ Variation / Genetic Drift	
Feb 9, 11, 13*	Ch. 11 & Assigned Reading	Natural Selection/Adaptation	Read Stearns et al. 2008 for class on Monday. Evodots simulation Essay Due Feb 13
Feb 16, 18, 20*	Ch. 12	Genetic theory of Natural Selection: modes of selection	Comments on Essays due Feb 18 Evodots write up due: Feb 20. EvoBeaker: Flowers and Trees
Feb 23, 25, 27	Exam 1 Feb 23 Ch. 2	The Tree of Life - Classification and Phylogeny	EvoBeaker assignment due Feb 27
Mar 2, 4, 6	Ch. 3	Patterns of Evolution	Assign Group projects
Mar 9, 11, 13	Ch. 4, 7	History of Life on Earth and Evolution in the Fossil Record	Final essay due Mar 9
	SPRING BREAK		
Mar 23, 25, 27*	Ch. 6	Evolutionary biogeography	Discuss Group project ideas in class. Niche Modeling Lab
Mar 30, Apr 1, 3*	Exam 2 March 30 Ch. 15	Species concepts	Niche Modeling Assignment Due Apr 3. EvoBeaker: HIV Clock
Apr 6, 8, 10	Ch. 16	Speciation	EvoBeaker assignment due April 10
Apr 13, 15, 17*	Ch. 17	Life History Evolution - NCUR on Apr. 17. Work with group on project.	Written Group assignment due Apr 13 EvoBeaker: Domesticating Dogs
Apr 20, 22, 24	Exam 3 April 24	Topic TBD – Class votes.	EvoBeaker assignment due April 24.
Apr 27, 29 May 1		Apr 27, 29 instead of class are giving labs. May 1 have group project debrief.	Teach Evolution Labs in BIO105
May 4, 6, 8		Topic TBD – Class votes.	
May 11	FINAL	Comprehensive Final - Monday, May 11, 2:30-4:30 pm	

* indicates days we will be meeting in a computer lab.