

PCB 4674 – Evolution
Sections 04H8, 7677, 7685, 7687
Syllabus for Spring 2014

I. Course Description and Prerequisites

Processes and mechanisms of evolution, including population genetics, speciation, patterns of evolution and molecular evolution. 4 credits.

Prerequisites: BSC 2010/2011 or the equivalent. Familiarity with Mendelian genetics, basic molecular biology, and high-school algebra.

II. Course Meetings

Lectures: MW periods 3-4, 9:35-11:30, 211 Bartram

Labs: Section 04H8 R periods 3-4, 9:35-11:30
Section 7685 R periods 5-6, 11:45-1:40
Section 7677 F periods 3-4, 9:35-11:30
Section 7687 F periods 5-6, 11:45-1:40

First day of classes: 06 January 2014

Last day of classes: 23 April 2014

Final Exam: Group 1C, Thursday, 01 May 2014, 12:30-2:30

III. Instructors

Course Instructor:

Dr. Nicole Gerlach

Department of Biology

Office: 520 Carr Hall

Office Hours: TBA

E-mail: ngerlach@ufl.edu

Teaching Assistants:

Ping Huang

Sections: TBA

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Arthur Rudolph

Sections: TBA

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IV. Course Communications

Course Website: <http://lss.at.ufl.edu>

Contacting Your Instructors: If you have a question about course mechanics or course material that cannot be answered from the syllabus, course announcements, or the course FAQ, please post it to the Discussion Boards on eLearning. If you have a question involving a personal issue, please e-mail the TA for your section or Dr. Gerlach, as appropriate. All e-mail correspondence must originate from your ufl.edu

account, have your full name in the body of the e-mail, and contain “PCB 4674” in the subject line. E-mails not meeting these requirements may not be recognized by our e-mail filters, and thus may not be answered. Barring unusual circumstances, expect a reply with 24 hours. E-mails and Discussion Board posts are checked at least once per day, but sometimes not more than that.

Communications From Your Instructors:

Each student is solely responsible for reading and following the policies, instructions, and schedules in this syllabus, on the course webpage, and announced in class. Not having read the information in this syllabus, on the webpage, or in course announcements will not constitute an excuse for missing deadlines, assignments, or other assessments.

V. Course Resources

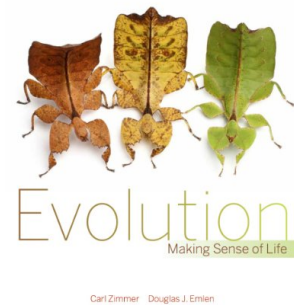
A. Textbook

Evolution: Making Sense of Life, 1e by Carl Zimmer & Douglas Emlen.
Roberts and Company (publisher), 2012.

Textbook publisher web site: <http://www.roberts-publishers.com/new-publications/evolution-making-sense-of-life-36.html>

B. TopHat

We will use the Top Hat Monocle (THM) Classroom Response System for quiz questions during class. THM allows students to use text messaging, laptop, tablet, smartphone, etc. to participate in class. Information on correctly registering for TopHat will be available in eLearning.



VI. Course Objectives

This course will provide a comprehensive introduction to the current field of evolutionary biology. By the end of this course you should be able to see how evolution provides a framework for the broader field of biology, and have a basic understanding of the major topics in evolutionary biology: the theory of evolution by natural selection, the history of evolutionary thought, population genetics, sexual and kin selection, evolutionary trees/phylogenies, how new species form, and human evolution.

Lectures will cover a variety of topics within the field of evolutionary biology. We will examine the theoretical basis of these various topics in detail, break that theoretical basis down into its underlying components, and pay particular attention to the mathematical theory underlying the main conceptual ideas. We will also examine how evolutionary theory can be applied to real-world examples, particularly in issues relevant to medicine, agriculture, conservation, and sociology. Lectures will include in-class clicker questions as well as break-out activities and discussions.

In addition to lectures there will be a series of discussions, workshop activities, and computer exercises in the context of the laboratory portion of the course. Discussions will involve readings from the primary literature followed by presentations, analysis, and/or discussion by groups of students. Computer and physical simulations will be used to illustrate a variety of concepts and methods of analysis used in modern evolutionary biology.

VII. Course Policies

A. Time Commitment

The UF College of Liberal Arts and Sciences assumes that each student will devote 3-4 hours per week per

credit-hour to each course. Because PCB 4674 is 4 credits, each student should therefore expect to devote 12-16 hours per week to this course.

B. Attendance

Students are responsible for all material presented in lecture, lab and in the assigned readings. Students who miss class are welcome to ask to borrow the notes of their classmates; the instructors will not be responsible for providing notes. Please note that no in-class quizzes or participation points can be made up, regardless of the reason for missing class.

C. Office Hours

Please see instructors in posted office hours when possible. If you have a conflict with those hours we will make an appt. to meet you and address questions. We cannot meet with students on a drop in basis.

D. Classroom Behavior

Readings should be done in advance of class; you are expected to come ready to discuss the topics. Please be courteous to others during both lecture and lab, particularly during in-class discussions. Students exhibiting disruptive behavior in class will be asked to leave, with the subsequent loss of participation points for that day. Use of electronic devices in class to take notes or otherwise participate in classroom activities is approved. Approved electronic devices are laptop computers, cell phones, smart phones, tablets, iPod touch, and voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. Unapproved electronic devices include video recorders, digital cameras and MP3 players.

E. Exams

Students are expected to arrive on time; no extra time will be given for students who arrive late. We will post exam keys that highlight the salient points for which credit is awarded. Please see us immediately if 1) your score is incorrectly summed, or 2) your posted score does not agree with the score on your exam. We will consider re-grades on a case by case basis, however, we will not argue about point assignments. To request a regrade, write a brief paragraph explaining why you believe your answer to a question was incorrectly scored, make specific reference to the posted key and submit to us in office hours (so that an instructor can look over your request and be sure it is clear). Regrade requests must be submitted within one week of the exam scores being posted.

F. Make-Up Exams

Make-up exams will only be available in cases of medical and/or family emergencies when documented by an accompanying letter from the Dean of Students, or for official academic activities (in which case the instructor should be contacted a minimum of two weeks in advance). The student is responsible for scheduling timely make-up exams with the instructor.

G. Late Work

Assignments should be submitted by the assigned deadline. Late work will be subject to a 20% penalty for every day it is late. For example, an assignment initially worth 10 points will be subject to a 2 point penalty if it is submitted up to 24 hours after the deadline, a 4 point penalty up to 48 hours, etc.

VIII. UF Policies

A. Academic Honesty

All students registered at the University of Florida have agreed to comply with the following statement:

"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

In addition, on all work submitted for credit the following pledge is either required or implied:

“On my honor I have neither given nor received unauthorized aid in doing this assignment.”

If you have knowledge of any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx#honesty>.

B. Accommodations for Students With Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation **by the second week of classes**. No accommodations are available to students who lack this documentation, and accommodations are not retroactive. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

C. Drop/Add/Withdrawal

A student can drop/add during the drop add period with no penalty. After drop/add, a student who drops will receive a W until the date listed in the academic calendar. After that date, the student may be assigned an “E” (fail). Note: it is the responsibility of the STUDENT to withdraw from a course, not the instructor. Failure to participate/complete the class is NOT a drop.

IX. Getting Help

A. Computing Problems

For issues with technical difficulties for eLearning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

It is each student’s responsibility to check their TopHat gradebook in a timely fashion to be sure their submissions are being properly recorded. **For problems with Top Hat Monocle, call the following support number:** 1-888-663-5491 or e-mail support@tophatmonocle.com

B. University Support Services

College can be a very stressful time in a person’s life. Resources are available on campus to help students meet academic goals and solve personal problems, which may interfere with their academic performance. If you find that you are having difficulty emotionally or academically, there is substantial support available. See “[A Self Help Guide for Students](#)” or contact on of the following services:

1. [UF Counseling and Wellness Center](#), Radio Rd Facility, 392-1575
2. [Dean of Students Office](#), 202 Peabody Hall, 392-1261
3. [Career Resource Center](#), Reitz Union, 392-1601
4. [CLAS Academic Advising Center](#), Farrior Hall, 100 Fletcher Drive, 392-1521

X. Assessments and Grading

A. Course Structure

Final grades will be based on 2 midterm exams (15% each), a comprehensive final exam (25%), a term project/paper (25%), and participation in lecture and laboratory activities (20%). Exams will be short answer/essay format. No mechanisms for extra credit are available.

B. Grading

Minimum grade cutoffs are listed below. These cutoffs will not be raised; in other words, if you receive 93% of the possible points, you are guaranteed to earn an A grade. A curve may be applied to individual exams or to the final scores, depending on the class average, and will be communicated clearly. However, we will *not* adjust grades on an individual basis.

Point Range (%)	Letter Grade
≥ 93	A
≥ 90	A–
≥ 87	B+
≥ 83	B
≥ 80	B–
≥ 77	C+
≥ 73	C
≥ 70	C–
≥ 67	D+
≥ 63	D
≥ 60	D–
< 60	E

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

- C. **Incomplete("I"):** If a student has completed the majority of the course work and particular DOCUMENTED circumstances prevent completion of the course in the time allotted, the student may, with the agreement of the instructor, be assigned an "I" pending resolution of the grade. All incompletes **MUST** be resolved by the end of the following term or the student will receive a grade of "E" (failing).

D. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester; **we do not adjust grades for individuals for any reason**. Plan to do well on all exams and other assignments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know sooner rather than later.

XI. Disclaimer

This syllabus represents the current plans and objectives; however, schedules, requirements, and assignments may change throughout the semester as the need arises. Such changes, communicated clearly, are not unusual and should be expected.

XII. Lecture Schedule

NOTE: The following schedule is tentative; lecture topics and coverage may change. Updated schedule and specific reading assignments will be posted on eLearning throughout the semester.

Week #	Lecture #	Date	Lecture Topic	Chapter	Lab Topic
1	1	M 06 Jan	Intro to Evolutionary Biology	1	History of the Earth
	2	W 08 Jan	History of Evolutionary Theory	2	
2	3	M 13 Jan	Geology and Paleontology	3	Phylogenies I
	4	W 15 Jan	Reading and Building Phylogenies	4	
3		M 20 Jan	MLK JR. DAY – NO CLASS		Phylogenies II
	5	W 22 Jan	Fossils and Phylogenies	4	
4	6	M 27 Jan	Understanding Variation	5	Alleles, Genotypes, Phenotypes
	7	W 29 Jan	Hardy-Weinberg, Genetic Drift	6	
5	8	M 03 Feb	Natural Selection I	6	Population Genetics
	9	W 05 Feb	Natural Selection II	6	
6		M 10 Feb	EXAM 1		NO LAB
	10	W 12 Feb	Heritability and the Breeder's Equation	7	
7	11	M 17 Feb	Evolution of multiple traits	7	Quantitative Genetics
	12	W 19 Feb	Evolution of complex traits	7	
8	13	M 24 Feb	Studying NS in the wild	8	Natural Selection in the Wild
	14	W 26 Feb	NS in and by humans / Molecular Phylogenies	9	
		M 03 Mar	SPRING BREAK – NO CLASS		
		W 05 Mar	SPRING BREAK – NO CLASS		
9	15	M 10 Mar	Molecular Evolution	9	Museum Activity
	16	W 12 Mar	Adaptation and Novelty	10	
10	17	M 17 Mar	Adaptation and Evo-Devo	10	NO LAB
		W 19 Mar	EXAM 2		
11	18	M 24 Mar	Evolution of Sex, Sexual Selection I	11	Sexual Selection
	19	W 26 Mar	Sexual Selection II	11	
12	20	M 31 Mar	Sexual Conflict, Life-History Evolution	11	Social Behavior
	21	W 02 Apr	Evolution of Social Behavior I	16	
13	22	M 07 Apr	Evolution of Social Behavior II	16	Speciation
	23	W 09 Apr	Allopatric Speciation	13	
14	24	M 14 Apr	Sympatric Speciation	13	Term Project Presentations
	25	W 16 Apr	Macroevolution	14	
15	26	M 21 Apr	Special Topics / TBA	TBA	NO LAB
	27	W 23 Apr	Special Topics / TBA	TBA	
		R 01 May	FINAL EXAM		