

Evolution PCB 4674 Spring 2008 Jan - Apr 2008

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Office: Sanson 215; hours: Tue, Thu 1:30-4:30 **Phone:** 561-297-2677

An in-depth examination of the mechanisms that operate in the evolutionary process.

Goals: By the end of this course, you will be able to discuss the history and development of evolutionary thought in Western society. You will be able to outline the mechanism of natural selection and provide examples that illustrate the process of speciation. You will understand the genetic basis of variation and be able to calculate gene frequencies and how they relate to populations in genetic equilibrium. You will also be able to distinguish sexual selection and kin selection from natural selection, and illustrate how they function differently. You will be able to summarize the history of life on earth and comment on the place of higher primates.

1. **Lecture schedule**

Tue & Thu 11:00 am - 12:20 pm GS 102 Jan 08 - Apr 22 2008

See attached schedule for details

The attached lecture schedule is intended to assist you as you formulate a study plan for this course. *I make every effort to maintain this schedule, but an occasional modification may be necessary.* The large volume of material associated with this topic necessitates individual study as not everything can be covered in lecture. It is your responsibility to read the required text chapters before coming to class.

2. **Required texts**

Futuyma, DJ. 2005. Evolution. Sinauer Associates Inc, Sunderland, MA.

Darwin, C. 1859. The Origin of Species. (various publishers produce copies of this work, any edition will suffice.)

The complete text of The Origin of Species is available online:

<http://www.literature.org/authors/darwin-charles/the-origin-of-species>

In addition to the required texts, various papers from the primary literature that address specific topics will be assigned throughout the semester. These papers will be posted on Blackboard for download.

3. **Grade distribution**

Mid-term exam 1	30%
Lab 1	5%
Mid-term exam 2	30%
Lab 2	5%
Final exam	30%

Mid-term and final exams will consist of multiple choice and short answer questions based upon lecture material and assigned readings. The emphasis will be upon integration of concepts. Grades will be posted on Blackboard and exams can be picked up in Sanson 215 during regular office hours.

4. **Exam Administration (mid-terms and final)**

- a. Please arrive before the start of the scheduled exam.
- b. You will be given the full class period to complete the exam although the actual exam will not take that long to complete.
- c. You must have your FAU photo ID to take the exam.
- d. Make-up exams will be given only if a medical emergency or similar extraordinary circumstance prevents you from taking the exam at the regularly scheduled time. You must notify the instructor and arrange a time for a makeup exam. The instructor reserves the right to substitute an oral exam for any make-up exam.

5. **Plagiarism**

Plagiarism will not be tolerated and will result in a minimum penalty of complete course failure.

6. **Students with disabilities**

In compliance with the Americans with Disabilities Act (ADA) students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in SU 133, x73880, and follow all OSD procedures.

Schedule

Date	Topic	Book chapter
Jan 08	Introduction to evolution	1
Jan 10	History of evolutionary thought	1
Jan 15	Darwin & the modern synthesis	1
Jan 17	Classification & phylogeny	2
Jan 22	Patterns of evolution	3
Jan 24	Geography of evolution	6
Jan 29	Species concept	15
Jan 31	Speciation	16
Feb 05	Midterm exam 1, 11:00 am – 12:20 pm	1,2,3,6,15,16
Feb 07	Evolution and theology	22
Feb 12	Origin of variation	8
Feb 14	Variation	9
Feb 19	Genetic drift (Dr Frazier)	10
Feb 21	Natural selection (Dr Frazier)	11
Feb 26	Darwin's dangerous idea – video	
Feb 28	Darwin's dangerous idea – video	
Mar 04	Spring break – no class	
Mar 06	Spring break – no class	
Mar 11	Gene theory of selection	12
Mar 13	Midterm exam 2, 11:00 am – 12:20 pm	8,9,10,11,12,22
Mar 18	Macroevolution	21
Mar 20	Sexual selection	14
Mar 25	Sexual selection – video	14
Mar 27	Kin selection & social behavior	14
Apr 01	Reproductive success	17
Apr 03	Co-evolution	18
Apr 08	A history of life on earth 1	5
Apr 10	A history of life on earth 2	5
Apr 15	Primate evolution & human origins	4
Apr 17	Culture & control of human evolution	
Apr 22	Review	
Apr 29	Final exam, 10:30 – 1:00 pm	4,5,14,17,18, 21