

Spring 2010 Honors Anthropology 1
Dr. Blair Gibson

Introduction to Physical Anthropology

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Office Hrs: MWF 1:30-2:30; TTh 8:30-9:00AM; 2-2:30 PM; Fri. 1-2 PM

Faculty web page: www.elcamino.edu/faculty/dbgibson/

Texts: required: *How Humans Evolved*, 5th ed., Robert Boyd and Joan Silk

Living with our Genes, Dean Hamer

The Triumph of Sociobiology John Alcock

A Photographic Atlas for Physical Anthropology, John Whitehead, et al.

: recommended: *The Human Evolution Coloring Book*, A. Zihlman

Course resources: Syllabi, handouts, and Powerpoint lectures can be viewed and downloaded on the class web page, accessed through my faculty index page. Copies of the textbooks are on reserve in the library in the reserve reading area.

Course Description: This course is a survey of the theoretical premises, state of knowledge, and current issues in the field of biological anthropology. The course will cover genetics and physiology, behavioral genetics, primate cladistics, anatomy, and behavior, and the fossil record for the primate order. As this is an honors section, it is assumed that the participant already has a foundation in basic biology, or can quickly acquire such.

Course Objectives / Student Outcomes

1. Demonstrate an understanding of the concept of the scientific method and its significance to science.
2. Describe and evaluate the major ideas that preceded and led to the development of evolutionary theory and analyze modern theories of Darwinian evolution through natural selection.
3. Identify and describe the processes by which genetic information is transmitted from one generation to the next.
4. Identify and discuss the various components of the DNA molecule and the process of protein synthesis.
5. Explain and assess the mechanisms of evolutionary change and explain how each one contributes to the evolutionary process.
6. Contrast point and chromosomal mutations and discuss the significance of point mutations to evolution.

7. List the major anatomical characteristics of primates associated with movement and the senses, and explain how they evolved as adaptations to an arboreal environment.
8. Contrast the major forms of primate social structure and describe their relationship to the primate species' ecology.
9. Explain the differences between relative and chronometric dating and provide an example of chronometric dating using a radiometric technique.
10. Evaluate the benefits of bipedalism in reference to the particular environment in which most hominid evolution occurred.
11. Compare and contrast the skull characteristics of *Australopithecus africanus*, *Australopithecus* (or *Paranthropus*) *boisei*, and *Homo habilis* in relation to the particular diet of each.
12. Contrast the anatomical characteristics of *Homo habilis* and *Homo erectus*, and analyze those contrasts in reference to their respective environments and subsistence strategies.
13. Analyze the characteristics of *Homo neanderthalensis* in reference to the environment in which this hominid lived.
14. Evaluate the models that account for the origin of *Homo sapiens*, outlining the major criteria and evidence supporting each.
15. Outline the cultural stages in the evolution of the genus *Homo*, making reference to the particular *Homo* species, tool industry, and environmental context associated with each stage.
16. Explain the difference between physiological adjustments and adaptations and explain skin color and body build as adaptations to particular environments.

Anthropology 1 Student Learning Outcome

In a written assignment, students will explain how natural selection is related to environmental factors by using an example that identifies key processes of natural selection and illustrates how selective pressures can change aspects of a species anatomy.

COURSE REQUIREMENTS

An essay, 2 tests and a final, a genetics problem set, an anatomy quiz, and an observational study of primates at a zoo. All exams will be multiple-choice and are non-cumulative, and will include questions on any films that are shown. English usage and organization will be graded on all written assignments (termed "presentation").

Grading:	essay, quiz, and problem set	16% (76 pts.)
	midterms	42% (200 pts.)
	final exam.	21% (100 pts.)
	non-human primate report	21% (100 pts.)

Specific breakdown: essay 25 pts., each problem set 25 pts., museum quiz c. 26 pts, exams 100 pts. ea., primate report 100 pts.

Test grade scales descend in 10% increments from the highest score that was achieved on a given test.

Make-ups: There are no make-ups allowed on the museum quiz or the final exam. Exams may only be made up under the following conditions: 1) the reason for missing the exam is **very** serious and documentable, 2) the instructor has been contacted on the day of the crisis or before. 3) Documentation of the problem is furnished to me prior to taking the make-up. 4) Make-ups may only be taken in my office during my office hours. 5) I will only delay giving back an exam and going over the results by a single class meeting, so the test must be made up before the second class meeting following an exam. **Under no circumstance will I ever agree to administer a test to a student before the scheduled date!**

Extra Credit: Students can earn a maximum of 30 pts. extra credit. These points will be earned through attending talks, tours, exhibits, and symposia relevant to the subject matter of biological anthropology, or by helping out with the Anthropology Museum. All extra credit work must be submitted by the end of the 14th week.

If you have any special problems or pressures, please discuss them with me as soon as you can, not at the end of the term!

STANDARDS OF STUDENT CONDUCT

Student responsibilities: *Full participation* is expected from the participants in this course. This responsibility entails attending class meetings, turning in work punctually, and reading the assigned materials. There are *consequences* for not living up to these responsibilities:

Attendance - I take attendance at the beginning of the period. I don't adjust attendance retroactively, so if a student misses roll, it is the student's responsibility to seek a correction on the day of the tardy. A student who is absent on a given day is still responsible for what transpired in class on that day. Missing class often means not receiving materials like study guides and guidelines for assignments. The student is to come to the instructor's office during the office hour to obtain any handout or unclaimed work a student has missed due to an absence. Attendance will figure into my grading at the end of term if the grade is borderline. I consider unexcused absences exceeding a week to be excessive. If you accumulate more than two week's worth of unexcused

absences you will be barred from future extra credit.

Late assignments - the grade on an assignment is dropped by one grade level (10%) for every class meeting it is late. Unexcused absences or mechanical difficulties with a computer or printer are not valid excuses for turning in an assignment late. Late assignments are graded at my convenience – so don't expect prompt feedback!

"Lost" Assignments – Operative assumption: **I don't lose assignments!** If a student claims that he/she completed an assignment and didn't get it back, the following procedure comes into play. 1) I demand a backup copy of the assignment, and it must be turned in the same day that the claim is made (24 hours). I retain the backup copy and search for the missing assignment. If by the end of the semester the original has not turned up, I then review of student's overall record of participation in the class. If the student's record is good and there is nothing "fishy" about the purported backup – e.g. absences are within the acceptable range, no other late or missing work, then I accept and grade the backup. If any of these conditions are not met, the student gets a 0, and I erase any extra credit points from the student's record for wasting my time.

Cheating: I don't fool around with those who cheat. Cheating includes copying off another's test, copying another student's assignment, or lifting material from a source, including the texts and internet websites, without proper acknowledgement (plagiarism), or submitting an assignment done for another class for this class. If I come across cheating I will notify the Honors Coordinator and the Academic Vice President.

Righteous behavior - if you wish for me to waiting for you at grade time with vengeance in my heart, then do any of the following 1) leave the classroom while lecture is in progress, and for added effect, cross directly in front of me to make sure I lose my train of thought. **If you do this I will deduct 20 points from your score and give you an unexcused absence for the day.** 2) read a newspaper, talk to your neighbor, show off your laptop computer, or sleep while lecture is in progress. 3) bring an active cell phone or pager to class, and if you really want to enrage me, take the call while class is in progress. These are all effective ways of communicating to me your interest level in the class, and your respect for me as a teacher.

Drops - Generally speaking, I will automatically drop anyone with more than two consecutive week's worth of absences. I may also drop anyone whose point total falls to more than 30 points below passing (after discussing the situation with the affected student). However, oversights occur, so ultimately it is the responsibility of the student to withdraw from the class if the student wishes to do so.

Incompletes - an incomplete will only be given to a student caught in the throes of a crisis not related to class performance.

Grade Reporting - I don't post final grades. If you wish to know your grade ahead of official reporting, bring me a grade card at the final exam, or submit a request via email.

Lectures

- | Week | Lecture topic and readings | Boyd and Silk | [Zihlman] |
|--|---|---|-------------------------------|
| (1) | The field of biological anthropology
Science and ideas | Prologue | |
| (2) | Evolution and natural selection | Chpt. 1
Chpt. 6: 161-163. | [Section 1 Intro., 1-1, 1-2] |
| Receive essay topic | | | |
| (3) | Inheritance and population genetics | Chpt. 2: 24-33 [1-10, 1-11, 1-12, 6-13]
Chpt. 5: 53-68; 75-79 | |
| Essay due 3/5
Receive genetics work sheet. | | | |
| (4) | Cell biology, DNA, and protein synthesis | Chpt. 2: 33-50 | [Section 2 Intro., 2-1 – 2-5] |
| Worksheet due Friday, March 12th | | | |
| (5 & 6) | Behavioral genetics | Chpt. 14: 405-6 | [3-14] Hamer: All |
| (7) | Genetic evidence for evolution in humans:
human polymorphisms. | Chpt. 14 to pg, 402 | [6-11, 6-14, 6-15] |
| Test #1 Friday April 2nd | | | |
| (8) | The living primates: ecological concepts,
cladistics, and core characteristics | Chpts. 4 & 5
1-7, 3-1 – 3-3, 3-5, 3-6, 4-1, 4-4 – 4-9,
4-13, 4-15, 4-16, 4-18, 4-20, 4-22, 4-33 - 4-35]
[Appendix, 3-21, 3-24] | [Section 3 & 4 Intro., 1-6, |
| (9) | Primate comparative anatomy
receive museum quiz | Appendix; Whitehead et al. Chpt. 1 | [3-8 – 3-17,
5-14 – 5-17] |
| Museum quiz taken Friday April 23rd | | | |
| (10 & 11) | Primate social behavior | Chpts. 5 - 7
Alcock: All! | [3-4, 3-23, 3-29, 4-33] |
| Capacity for learning, and communication. Chpt. 8; Chpt. 15: 426-437 [3-32 – 3-35] | | | |
| Non-human primate report due Fri. May 7th | | | |
| (12) | Discuss Alcock | | |

Test #2 Friday May 14th

- (13) Dating techniques the origins of the primates. Chpt. 9 [1-21, 1-22, 5-4]
[4-2, 4-3, 4-10, 4-11, 4-27, 4-28, 4-29]
- (14) The origins of the Hominidae. Chpts. 10 & 11 [5-5 – 5-13, 5-16 – 5-22]
- (15) Early *Homo*. Chpt. 12: 305-319 [5-23-5-25]
- (16) *Homo sapiens*. Chpt. 12: 319-339 [5-26]
- Homo sapiens sapiens* Chpt. 13 [5-27-5-29]

Final on Friday June 11th