



INTRODUCTION TO PHYSICAL ANTHROPOLOGY ANTH 1: SECTION 2045

Instructor: Alberto Vigil

Class time: 9:30AM-10:55AM

Room: 334

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When emailing state time of class and subject of email (*e.g.* TTh 9:30 extra credit)

Course Description:

Physical/biological anthropology is a subdiscipline of anthropology that explores the evolution and biological diversity of the human species, as well as our closest living relatives, the non-human primates. Topics include: genetics, mechanisms of evolution, the biology and behavior of non-human primates, the study of human evolution through examination of the fossil record, human variation and biological adaptation, and forensic anthropology.

Course Objectives:

Through lectures, discussions, films, and participation in various activities, students will expand their knowledge of science and further develop critical thinking skills. Upon successful completion of the class, students will have a broader understanding of the processes of evolution, primate behavior, the fossil record, and human diversity. Anthropology is also about the study of humans and their relationship to other species and the environment. I hope that by taking this course, you'll gain a greater appreciation of the natural world and of our place in it! Upon completion of the course, students will be able to:

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 hominin evolution occurred.
11. Compare and contrast the cranial characteristics of *Australopithecus africanus*, *Paranthropus boisei* and *Homo habilis* in relation to the particular diet of each species.
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 hominin 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.

STUDENT LEARNING OUTCOMES:

Student learning outcomes are behavioral objectives - what a student should know, value and be able to demonstrate or perform after the class is completed. Below is an example of a student learning outcome for this class:

1. Natural Selection - 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.
2. Primate Arboreal Adaptation - Adaptation In an in-class assignment or objective exam question, students will demonstrate an understanding of primate adaptation by describing the major anatomical characteristics of primates associated with movement and the senses, and identifying how they evolved as adaptations to arboreal environments.
3. Human Evolution - In a written assignment or objective exam question(s), students will demonstrate an understanding of human evolution by comparing and contrasting the anatomical and behavioral features of modern *Homo sapiens* with various extinct species of the Genus *Homo* (e.g. Neandertals, *H. erectus*, *H. habilis*).

Syllabus:

The syllabus is the course contract. You are responsible for keeping a copy of the syllabus and class schedule and being aware of all content.

Grading:

1. *Midterm Exam will be worth 40%*. Any information presented in class will be covered in the exam unless otherwise stated. **You will need a Scantron 882-E**
2. *Final Exam is worth 20%*. The final will be cumulative. **Everyone must take the final exam. You will need a Scantron 882-E.**
3. *Quizzes are worth 10%*. There will be 8 quizzes throughout the semester. Each of the quizzes will have the same value. **They will be given at the start of class.** We will use **Scantron 815-E for the quizzes.**
4. *Term paper will be worth 20%*. This semester's paper will deal with the topic of evolutionary medicine. You will produce a 3 to 5 page research paper in standard MLA format. All written assignments must be typed and turned in during class. Details of this assignment will be made available during the fourth meeting in *my site*.
5. *Class participation is worth 10%*. Be prepared to discuss readings and participate in class.
6. *Extra credit- Up to 5% possible*. Information on extra credit will be made available after the first midterm.

Your grade for the course will be determined from the total number of points accrued during the semester:

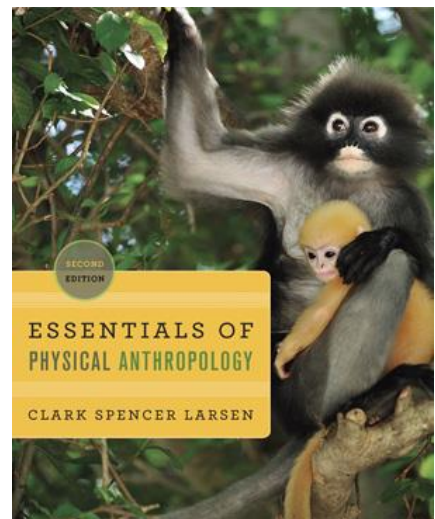
- A = 100 - 90%
- B = 89.99 - 80%
- C = 79.99 - 70%
- D = 69.99 - 60%
- F = Anything below 60%

Note: To be successful in this course you must come prepared to class by bringing in necessary course materials and keep up with readings.

Required Text:

Larson, Clark (2013) *Essentials of Physical Anthropology*. 2nd ed Norton. ISBN-13: 978-0393919387

- Cost... The bookstore sells your text for \$131.52 new or \$99 used. The book is also available as an ebook and as a rental through various web providers.



Attendance Policy:

Regular attendance is required. I will pass around an attendance sheet, and it is your responsibility to sign in. If you come in late or leave early without advance notice, you may be marked absent. If you have more than **4 unexcused absences**, you may be dropped from the class. Excused absences include absences for medical, family and legal reasons. If you miss class, you are responsible for finding out what was assigned or discussed during the class from a fellow student.

Dropping the class:

It is the student's responsibility to drop the class in a timely manner. You can drop through admissions and records or through MyECC. The last day to drop with a W is Friday, Nov 13th.

<i>Important Days</i>	
Friday, September 4	Last Day to Drop Without Notation on Permanent Record
Friday, September 4	Last Day to Drop for an Enrollment Fee Refund
Friday, November 13	Last Day to Drop with a "W"
Thursday, November 26 – 29	Thanksgiving Holiday
Thursday, December 10	Last Day of our class

Student Conduct:

I want the classroom atmosphere to be friendly and free of tension, so that all interested students can participate and enjoy. Please turn off all cell phones, and other electronic gear before entering the classroom, and refrain from answering phones or text-messaging in class. Talking without consideration for others who are trying to listen and participate will not be tolerated. After one warning, students who continue to engage in this, or other disruptive behaviors will be asked to leave the class. Repeat offenders will simply be removed from the class.

Statement on Academic Integrity:

Cheating and plagiarism (using as one's own ideas, writings or materials of someone else without acknowledgement or permission) can result in any one of a variety of sanctions. Such penalties may range from an adjusted grade on the particular exam, paper, project, or assignment to a failing grade in the course.

American Disabilities Act Statement

El Camino College is committed to providing educational accommodations for students with disabilities upon the timely request by the student to the instructor. A student with a disability, who would like to request an academic accommodation, is responsible for identifying herself/himself to the instructor and to the Special Resources Center. To make arrangements for academic accommodations, contact the Special Resources Center (1-310-660-3593, X3296).

Student Services:

El Camino offers a wide range of support services on campus including a counseling division, writing center, transfer center, health center, career services center and library. I will be announcing anthropology tutoring hours throughout the semester, but for additional services available to El Camino students please visit www.elcamino.edu/student-services/.

A few final notes...

- I realize that personal crises such as extended illness and family emergencies can arise during the course of the semester. If you find yourself in difficult circumstances, please get in touch with me as soon as possible. I will look at each individual circumstance and work with you to resolve the issue. But the important thing is to communicate with me—in person, by email, or by phone. If you are personally unable to contact me, have a friend or family member do it. If I don't hear from you, there is very little that I can do after the fact.

***This syllabus is subject to change; any changes to the syllabus or readings will be announced in class.**

Course outline

Section 1: Genes and inheritance: How genes allow for structures, function and continuation.

Learning Unit 1: Physical anthropology introduction (8/25-8/27)

Readings:

- Textbook: Larsen Ch.1 - pgs. 3-17
- Reading: The Nature of Science and the Scientific Method. By McLelland, Christine

Learning Unit 2: DNA, genes and chromosomes (9/1-9/3)

Readings:

- Textbook: Larsen Ch. 3 pgs. 41-65

Assignments:

- Quiz 1

Learning Unit 3: Mendel and inheritance (9/10-9/8)

Readings:

- Textbook: Larsen Ch.2 pgs. 33-38

Assignments:

- Quiz 2

Exam I (9/15)

- Our midterm will consist of learning Units 1-3
- You will need an 882-E scantron

- **Section 2: Evolutionary mechanisms: The natural forces that drive genetic change.**

Learning Unit 4: History of evolutionary thought (9/17)

Readings:

- Textbook: Larsen Ch.2 pgs. 11-33

Learning Unit 5: Evolutionary mechanisms – Natural selection and sexual selection (9/24-9/29)

Readings:

- Textbook: Larsen Ch. 4, pgs. 67-68
- Blackboard Reading: Evolution and the Origins of Disease By Nesse RM and Williams C (1998)

Assignments:

- Quiz 3

Learning Unit 6: Evolutionary mechanisms – Mutations, genetic drift, and gene flow (10/1-10/6)

Readings:

- Textbook: Larsen Ch. 4, pgs. 85-93
- Resistant Mutation By Galvani AP and Novembre J (2005)

Assignments

- Quiz 4

Exam II (10/8)

- **Our midterm will consist of learning Units 4-6**
- **You will need an 882-E scantron**

- **Section 3: Primates and taxonomy: Our place in the natural world.**

Learning Unit 7: Primate Taxonomy (10/13-10/15)

Readings:

- Textbook: Larsen Ch. 6 pgs. 123-153
- What is a Species? By Gould SJ (1992)

Assignments:

- Quiz 5

Learning Unit 8: Primate Cenozoic evolution (10/20)

Readings:

- Textbook: Larsen Ch. 9 pgs. 203-227

Assignments:

- Quiz 6

Learning Unit 9: Primate socialbehavior (10/22-10/29)

Readings:

- Textbook: Larsen Ch. 7 pgs. 155-168
- Reading: Chimps in the Wild Show Stirrings of Culture By Vogel G (1999)

Exam III (11/3)

- **Our midterm will consist of learning Units 7-9**
- **You will need an 882-E scantron**

- **Section 4: Hominins: Evolution and adaptations of the habitual bipeds.**

Learning Unit 10: Dating techniques (11/5)

Readings:

- Textbook: Larsen Ch. 8 pgs. 173-202
- Reading: Direct Dating of Human Fossils By Grun R (2006)

Assignments:

Learning Unit 11: Hominin habitual biped adaptations (11/10)

Readings:

- Textbook: Larsen Ch. 10 pgs. 229-259

Assignments:

Learning Unit 12: Early Homo (11/12)

Readings:

- Textbook: Larsen Ch. 11 pgs. 263-285
- Reading: Endurance Running and the Evolution of Homo by Bramble DM and Lieberman DE (2004)

Assignments:

- Quiz 7

Learning Unit 13: Late Homo (11/17)

Readings:

- Textbook: Larsen Ch. 12 pgs. 287-306

Learning Unit 14: Homo sapiens (11/19-12/1)

Readings:

- Textbook: Larsen Ch. 12, pgs. 307-326
- reading: The Gift of Gab By Cartmill M (1993)

Assignments:

- Quiz 8

Learning Unit 15: Human variation (12/3)

Readings:

- Textbook: Larsen Ch. 5 pgs, 95-122
- Reading: The Human Genome and Our View of Ourselves By Svante Paabo (2001)

Assignments:

Human variation or race?

Learning Unit 16: The Holocene (12/8)

Readings:

- Textbook: Larsen Ch. 13 pgs, 329-354
- Reading: Disease in Human Evolution: The re-emergence of Infectious Disease in the Third Epidemiological Transition. By Armelagos et al (1996)

Final Exam

- Our Final will *mostly* consist of Units 11 to 16. 10% of the exam will consist of the main ideas covered in previous sections.
- The exam will be on Thursday, December 10