

OVERVIEW

This course is an intermediate course in biological anthropology. ANTH 1 (previously or concurrently) or my permission (routinely given for COGS, ES, or BNS majors) are the only prerequisites. The main objective of the course is to develop a theoretical basis from which you can interpret articles, news reports, museum collections, and films concerning human evolution and the lifeways of early humans. Within your lifetime, if not in the next decade, many of the details concerning primate behavior, the fossil record, and prehistoric cultures will change as excavations and research continue, but the interpretative frameworks you learn now should remain valid much longer.

The course begins with basic concepts in the synthetic theory of evolution. This is the dominant framework in biological anthropology for understanding humankind's relationships with other life forms and with diverse environments.

The second part of the course focuses on humankind's closest living relatives – the primates. We shall be concerned with the taxonomic relations among the living primates, their geographical distributions, their morphologies, and their distinctive adaptations including especially their social behavior.

The third and largest segment is a chronological overview of human evolution and cultural development. It begins with a sketch of the primate fossil record, beginning about 65 million years ago and concentrating on that line leading to ourselves. Special attention will be given to the australopiths (the earliest known hominids) and the divergence of genus *Homo* from them between 5 and 3 million years ago. We then follow the human pedigree to the period of human dispersal around the world and the increasing reliance on culture as our primary means of adapting to the environment. By at least 40,000 years ago, our ancestors completed the transition and had become a fully cultural species.

The final segment deals with physical diversity among contemporary humans. For example, what is the meaning and significance of race? And, if time permits, we will also discuss selected aspects of modern human behavior from an evolutionary perspective, such as the human life cycle, human mate choice, and parenting.

MATERIALS

Required:

- Campbell, Bernard G.; Loy, James D.; and Cruz-Uribe, Kathryn (2006) *Humankind Emerging, 9th Edition*. Boston: Pearson Education, Inc. [ISBN: 9780205423804]
Kurtén, Björn (1995) *Dance of the Tiger: A Novel of the Ice Age*. Berkeley: University of California Press. First Swedish edition published in 1978. [ISBN: 9780520202771]
Hand calculator that can store numbers in memory and extract square roots.

Recommended (for students seriously interested in subject, but not required):

- Boyd, Robert and Silk, Joan B. (2012) *How Humans Evolved, 6th Edition*. New York: Norton. [ISBN: 978-0-393-91227-2]
Lewin, Roger and Foley, Robert A. (2004) *Principles of Human Evolution, 2nd Edition*. Malden, MA: Blackwell Publishing. [ISBN: 0-632-04704-6]
Sept, Jeanne (1997) *Investigating Olduvai* (compact disk). Bloomington: Indiana University Press. [ISBN: 0-253-33219-2]
Auel, Jean M. (2002) *The Clan of the Cave Bear*. New York: Bantam Books. First published in 1980. [ISBN: 0-553-38167-0]

REQUIREMENTS

Your grade in the course will be determined by your performance on four non-cumulative hour exams and two short paper assignments. The exams correspond roughly to the main segments of the course and are combinations of multiple choice and essays. The first exam's format is slightly different because it includes several genetics problems. All exam dates will be announced in advance (see course schedule, below), with the fourth one being given during the first sixty minutes of the time-slot assigned us in the "Final Exam" period. Detailed instructions for the paper assignment(s) will be distributed separately during the semester.

EXAM POLICY. You are responsible for taking all four exams during their regularly scheduled times. Any exception to this policy must be **approved by me, John Gatewood, *IN ADVANCE*** of the exam. Failure to take an exam as scheduled (or as re-scheduled by me beforehand) will result in an automatic "F" in the course, irrespective of what grades you may have earned on other requirements. If some emergency should occur that will prohibit you from taking an exam, be sure to speak with me directly, either in person or by phone, but do not just leave a message and/or send an e-mail and think that is sufficient.

ATTENDANCE POLICY. Attendance is required, and I think you will find that coming to class regularly is most helpful in understanding course materials. Please turn off cell phones and any other electronic devices when in the classroom.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES. If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center 212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

COMMUNITY OF LEARNING. Lehigh University endorses The Principles of Our Equitable Community (<http://www4.lehigh.edu/diversity/principles>). We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

CLASS PERIODS BY CALENDAR DAYS

<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>	<u>Friday</u>
Aug 25	—	Aug 27	—	Aug 29
Sept 1	—	Sept 3	—	Sept 5
Sept 8	—	Sept 10	—	Sept 12
Sept 15	—	Sept 17	—	Sept 19
Sept 22	—	Sept 24	—	Sept 26
Sept 29	—	Oct 1	—	Oct 3
—	—	Oct 8	—	Oct 10
Oct 13	—	Oct 15	—	Oct 17
Oct 20	—	Oct 22	—	Oct 24
Oct 27	—	(Oct 29)	—	(Oct 31)
Nov 3	—	Nov 5	—	Nov 7
Nov 10	—	Nov 12	—	Nov 14
Nov 17	—	Nov 19	—	Nov 21
Nov 24	—	—	—	—
Dec 1	—	Dec 3	—	(Dec 5)

SCHEDULE OF TOPICS AND READINGS

PART I: EVOLUTION

1. Aug 25 (M) Course Outline and Requirements
Historical Perspective on the Concept of Evolution
Notions of Time and the Idea of Progress
Uniformitarianism vs. Catastrophism
Readings: Campbell, et al., pp. xv-xx and 1-8
2. Aug 27 (W) Historical Perspective on the Concept of Evolution
Establishing the Antiquity of the Earth and Humankind
The Contributions of Darwin and Mendel
Readings: Campbell, et al., pp. 8-23
3. Aug 29 (F) Principles of Heredity
Sexual Reproduction
Sources of Genetic Variability
Genotype and Phenotype
Readings: Campbell, et al., pp. 24-36
4. Sept 1 (M) Principles of Heredity
Monogenic (Single-Gene) Traits
Polygenic (Multiple-Gene) Traits
Readings: Campbell, et al., pp. 17-19
5. Sept 3 (W) Genetic Bases of Evolution
Populations: The Units of Evolution
Gene Frequencies
Hardy-Weinberg Law of Allelic Stability
Readings: Campbell, et al., pp. 36-49
6. Sept 5 (F) Genetic Bases of Evolution
Darwinian Evolution: Selection
Practice Problems: Gene Frequency and Selection [bring [calculator](#)]
Readings: Campbell, et al., pp. 36-49
7. Sept 8 (M) Genetic Bases of Evolution
Non-Darwinian Evolution: Mutation, Gene Flow, and Genetic Drift
Demonstration: Computer Simulation of Genetic Drift
Readings: Campbell, et al., pp. 36-49
**** 4:00 PM or 7:00 PM ** ... (to be decided by class)**
STUDENT PRACTICE: all five kinds of genetics problems.
8. Sept 10 (W) Major Patterns in Evolution
Speciation and Extinction
Niche Overlap and the Idea of Competition among Species
Adaptive Radiations and Mass Extinctions
Punctuated Equilibria v. Phyletic Gradualism
Readings: Campbell, et al., pp. 49-57

9. Sept 12 (F) Major Patterns in Evolution
Analogies (Convergence and Parallelism) vs. Homologies
Constructing Phyletic Trees: Cladistics vs. Numerical Taxonomy
Phylogeny and Biological Classification
Readings: Campbell, et al., pp. 58-61

10. Sept 15 (M) ► ► ► **First Hour Exam** (bring calculator) ◀ ◀ ◀

PART II: THE ORIGIN OF HUMANKIND

11. Sept 17 (W) The Taxonomic Position of Homo sapiens
The Living Primates
Characteristics and Distributions of Strepsirhines
Readings: Campbell, et al., pp. 58-71

12. Sept 19 (F) The Living Primates
Characteristics and Distributions of Haplorhines
Human Characteristics
Readings: Campbell, et al., pp. 71-89

13. Sept 22 (M) Primate Adaptive Systems
Social Behavior and Organization
Mammalian Reproductive Strategies: Female vs. Male
Mating Systems among Nonhuman Living Primates
Readings: Campbell, et al., pp. 90-110

14. Sept 24 (W) Primate Adaptive Systems
Territory and Ecology
Feeding and Dentition
Locomotion
Readings: Campbell, et al., pp. 90-110

15. Sept 26 (F) Primate Adaptive Systems
Examples of Nonhuman Primate "Culture"
Distinctive Features of Human Social Behavior
Readings: Campbell, et al., pp. 110-129

16. Sept 29 (M) Fossil Record
Dating Methods
Time Scales
Readings: Campbell, et al., pp. 130-134

17. Oct 1 (W) Fossil Record
Early Primates
Readings: Campbell, et al., pp. 134-142

18. Oct 3 (F) Fossil Record
Early Anthropoids
Readings: Campbell, et al., pp. 134-142

19. Oct 8 (W) Fossil Record
 Early Hominoids
 Apes to Hominins: Anatomical Criteria
 Readings: Campbell, et al., pp. 142-159
20. Oct 10 (F) ► ► ► **Second Hour Exam** ◀ ◀ ◀
21. Oct 13 (M) Australopiths in South Africa, East Africa, and the Sahul
 History of Discoveries
 General Characteristics
 More Recent Finds and New Interpretations
 Readings: Campbell, et al., pp. 160-182 & 183-220
22. Oct 15 (W) The Advent of *Homo*
 History of Discoveries
 Early Hominine Lifestyles
 Readings: Campbell, et al., pp. 221-238
23. Oct 17 (F) The Evolution of Hominin Behavior
 Theories of Bipedalism
 Early Technology
 Brain Expansion
 Readings: Campbell, et al., pp. 239-261
24. Oct 20 (M) Proto-Human Social Organization and the Divergence between Australopiths and Genus *Homo*
 Readings: Campbell, et al., pp. 239-261

PART III: THE EVOLUTION OF HUMANKIND

25. Oct 22 (W) *Homo erectus*
 History of Discoveries
 General Characteristics
 Readings: Campbell, et al., pp. 262-287
26. Oct 24 (F) *Homo erectus*
 General Characteristics (continued)
 Readings: Campbell, et al., pp. 262-287
27. Oct 27 (M) *Homo erectus*
 Environment and Technology
 Scavenging vs. Hunting
 New Social Developments
 Intraspecies Aggression
 Readings: Campbell, et al., pp. 288-310
28. Oct 29 (W) NO CLASS ... (Prof. Gatewood at professional meetings)
29. Oct 31 (F) NO CLASS ... (Prof. Gatewood at professional meetings)

30. Nov 3 (M) The Evolution of Language and the Brain (continued)
Readings: Campbell, et al., pp. 331-356

31. Nov 5 (W) The Evolution of Language and the Brain (continued)
Readings: Campbell, et al., pp. 331-356

32. Nov 7 (F) ► ► ► **Third Hour Exam** ◀ ◀ ◀

PART IV: MODERN HUMANITY

33. Nov 10 (M) ••• **Paper Assignment #1, due** •••
Homo heidelbergensis
General Characteristics
Evidence for Hunting
Culture and Society
Readings: Campbell, et al., pp. 311-330

34. Nov 12 (W) The Neandertals
Anatomical Characteristics
Distribution
Readings: Campbell, et al., pp. 357-388
(start reading Kurtén's novel)

35. Nov 14 (F) The Neandertals
Cultural Developments
Readings: Campbell, et al., pp. 357-388
(reading Kurtén's novel)

36. Nov 17 (M) The Evolution of Modern Humans
Anatomically Modern Homo Sapiens
Lithic Technologies and Sequences
Regional-Continuity vs. Rapid-Replacement Models
Readings: Campbell, et al., pp. 389-416
(reading Kurtén's novel)

37. Nov 19 (W) The Evolution of Modern Humans
Molecular Genetics Evidence
Settlement of the Americas and Australia/New Guinea
Upper Paleolithic Technology, Magic, and Art
Readings: Campbell, et al., pp. 417-437
(finish Kurtén's novel)

38. Nov 21 (F) The Human Condition
Domestication of Plants and Animals
Cities, States, and Civilizations
Readings: Campbell, et al., pp. 438-446

39. Nov 24 (M) Contemporary Biological Variation
 Methods for Studying Traits
 Some Simple Physical Variations
 Clinal Distributions
 Readings: Campbell, et al., pp. 446-454
40. Dec 1 (M) The Concept and Meaning of Race
 Contrasting Views of Race
 Peculiar Logic of Forensic Anthropologists
 Readings: Campbell, et al., pp. 454-460
41. Dec 3 (W) ••• **Paper Assignment #2, due** •••
 The Concept and Meaning of Race
 Biological Race vs. Social Race vs. Ethnic Identity
 Race and IQ
 Readings: Campbell, et al., pp. 460-466
 Course Summary & Student Evaluations
42. Dec 5 (F) NO CLASS ... (Prof. Gatewood at professional meetings)

REMINDER ... The fourth hour exam (which is non-cumulative) will be during the Final Exam period.
 The time, place, and date will be assigned by the Registrar toward the end of the semester.

FILM SCHEDULE

Students are responsible for viewing the following films on their own time, i.e., outside of class. All seven films will be held “on reserve” for one week in the Fairchild-Martindale Library and must be viewed there. Ask for films at the main Circulation Desk. The dates in the left-hand column indicate the date during the semester when each film goes “off” reserve, so you should see the film by then.

NOTE: When viewing a film, students should be sure to “sign-in” for that film at the Fairchild-Martindale Library’s Circulation Desk.

<u>“VIEW BY” DATE</u>	<u>FILM TITLE / LEHIGH CATALOG NUMBER</u>
1. Sept 19 (F)	“Survey of the Primates” (1988, 38 min) MC VC LU 3032
2. Sept 26 (F)	“Among the Wild Chimpanzees” (1984, 59 min.) MC VC LU 164 / DVD 1113
3. Oct 1 (W)	“Baboon Tales” (1998, 52 min) MC VC LU 3119
4. Oct 15 (W)	“In Search of Human Origins, Part 1” (1994, 60 min.) MC VC LU 2300, pt. 1
5. Oct 29 (W)	“In Search of Human Origins, Part 2” (1994, 60 min.) MC VC LU 2300, pt. 2
6. Nov 14 (F)	“In Search of Human Origins, Part 3” (1994, 60 min.) MC VC LU 2300, pt. 3
7. Nov 21 (F)	“Collapse” (1994, 60 min.) MC VC LU 1451, pt. 8 / DVD 1495 #disc 4, prog.8