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:
Hand calculator that can store numbers in memory and extract square roots.

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

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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

    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 ◄ ◄ ◄

   History of Discoveries
   General Characteristics
   More Recent Finds and New Interpretations
   Readings: Campbell, et al., pp. 160-182 & 183-220

   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

   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
                 Cites, 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.

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<th>“VIEW BY” DATE</th>
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<tr>
<td>1. Sept 19 (F)</td>
<td>“Survey of the Primates” (1988, 38 min) MC VC LU 3032</td>
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<td>2. Sept 26 (F)</td>
<td>“Among the Wild Chimpanzees” (1984, 59 min.) MC VC LU 164 / DVD 1113</td>
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<td>3. Oct 1 (W)</td>
<td>“Baboon Tales” (1998, 52 min) MC VC LU 3119</td>
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<td>7. Nov 21 (F)</td>
<td>“Collapse” (1994, 60 min.) MC VC LU 1451, pt. 8 / DVD 1495 #disc 4, prog.8</td>
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