OVERVIEW

This is an introduction to physical anthropology. The main objective 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 developments. 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”? 

MATERIALS

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

REQUIREMENTS

Your grade in the course will be determined by your performance on four non-cumulative hour exams and one short paper assignment. 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 will be distributed separately during the semester. Lastly, we will have several brief, in-class “quizzes” on randomly chosen days during the semester. Those who are present to take those quizzes will earn some extra credit points.
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 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. Take notes the old-fashioned way – with pen and paper.

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, Williams Hall, Room 301 (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

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 29</td>
<td>—</td>
<td>Aug 31</td>
<td>—</td>
<td>Sept 2</td>
</tr>
<tr>
<td>Sept 5</td>
<td>—</td>
<td>Sept 7</td>
<td>—</td>
<td>Sept 9</td>
</tr>
<tr>
<td>Sept 12</td>
<td>—</td>
<td>Sept 14</td>
<td>—</td>
<td>Sept 16</td>
</tr>
<tr>
<td>Sept 19</td>
<td>—</td>
<td>Sept 21</td>
<td>—</td>
<td>Sept 23</td>
</tr>
<tr>
<td>Sept 26</td>
<td>—</td>
<td>Sept 28</td>
<td>—</td>
<td>Sept 30</td>
</tr>
<tr>
<td>Oct 3</td>
<td>—</td>
<td>Oct 5</td>
<td>—</td>
<td>( * Oct 7 * )</td>
</tr>
<tr>
<td>Oct 10</td>
<td>—</td>
<td>Oct 12</td>
<td>—</td>
<td>Oct 14</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>Oct 19</td>
<td>—</td>
<td>Oct 21</td>
</tr>
<tr>
<td>Oct 24</td>
<td>—</td>
<td>Oct 26</td>
<td>—</td>
<td>Oct 28</td>
</tr>
<tr>
<td>Oct 31</td>
<td>—</td>
<td>Nov 2</td>
<td>—</td>
<td>Nov 4</td>
</tr>
<tr>
<td>Nov 7</td>
<td>—</td>
<td>Nov 9</td>
<td>—</td>
<td>Nov 11</td>
</tr>
<tr>
<td>Nov 14</td>
<td>—</td>
<td>Nov 16</td>
<td>—</td>
<td>Nov 18</td>
</tr>
<tr>
<td>Nov 21</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Nov 28</td>
<td>—</td>
<td>Nov 30</td>
<td>—</td>
<td>Dec 2</td>
</tr>
<tr>
<td>Dec 5</td>
<td>—</td>
<td>Dec 7</td>
<td>—</td>
<td>Dec 9</td>
</tr>
</tbody>
</table>

* Note: There will be no class on October 7; Prof. Gatewood will be out-of-town.
SCHEDULE OF TOPICS AND READINGS

PART I: EVOLUTION

1. Aug 29 (M)  
   Course Outline and Requirements  
   The Discipline of Anthropology

2. Aug 31 (W)  
   Historical Perspective on the Concept of Evolution  
   Uniformitarianism vs. Catastrophism  
   Establishing the Antiquity of the Earth and Humankind  
   The Contributions of Darwin and Mendel  
   Readings: Campbell, et al., xv-xx and pp. 1-23

3. Sept 2 (F)  
   Principles of Heredity  
   Sexual Reproduction  
   Sources of Genetic Variability  
   Genotype and Phenotype  
   Readings: Campbell, et al., pp. 24-36

4. Sept 5 (M)  
   Principles of Heredity  
   Monogenic (Single-Gene) Traits  
   Polygenic (Multiple-Gene) Traits  
   Readings: Campbell, et al., pp. 17-19

5. Sept 7 (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 9 (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 12 (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

8. Sept 14 (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 16 (F)  
   STUDENT PRACTICE: all five kinds of genetics problems.  
   [bring homework assignment and calculator to class]
10. Sept 19 (M)  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

11. Sept 21 (W)  ► ► ►  First Hour Exam  (bring calculator)  ◄ ◄ ◄

PART II:  THE ORIGIN OF HUMANKIND

12. Sept 23 (F)  The Taxonomic Position of Homo sapiens
   The Living Primates
   Characteristics and Distributions of Strepsirhines
   Readings: Campbell, et al., pp. 58-71

13. Sept 26 (M)  The Living Primates
   Characteristics and Distributions of Haplorhines
   Human Characteristics
   Readings: Campbell, et al., pp. 71-89

   Social Behavior and Organization
   Mammalian Reproductive Strategies: Female vs. Male
   Mating Systems among Nonhuman Living Primates
   Readings: Campbell, et al., pp. 90-110

15. Sept 30 (F)  Primate Adaptive Systems
   Territory and Ecology
   Feeding and Dentition
   Locomotion
   Readings: Campbell, et al., pp. 90-110

16. Oct 3 (M)    Primate Adaptive Systems
   Examples of Nonhuman Primate “Culture”
   Distinctive Features of Human Social Behavior
   Readings: Campbell, et al., pp. 110-129

17. Oct 5 (W)    Fossil Record
   Dating Methods
   Time Scales
   Readings: Campbell, et al., pp. 130-134

18. Oct 7 (F)    - - -  [ NO CLASS ]  - - -

19. Oct 10 (M)   Fossil Record
   Early Primates
   Readings: Campbell, et al., pp. 134-142
20. Oct 12 (W) Fossil Record
   Early Anthropods
   Readings: Campbell, et al., pp. 134-142

21. Oct 14 (F) Fossil Record
   Early Hominoids
   Apes to Hominins: Anatomical Criteria
   Readings: Campbell, et al., pp. 142-159

22. Oct 19 (W)  ► ► ► 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 Homininine Lifestyles
   Readings: Campbell, et al., pp. 221-238

   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

27. Oct 31 (M) Homo erectus
   History of Discoveries
   General Characteristics
   Readings: Campbell, et al., pp. 262-287

28. Nov 2 (W) Homo erectus
   General Characteristics (continued)
   Readings: Campbell, et al., pp. 262-287

29. Nov 4 (F) Homo erectus
   Environment and Technology
   Scavenging vs. Hunting
   New Social Developments
   Intraspecies Aggression
   Readings: Campbell, et al., pp. 288-310
30. Nov 7 (M) The Evolution of Language and the Brain (continued)
   Readings: Campbell, et al., pp. 331-356

31. Nov 9 (W) The Evolution of Language and the Brain (continued)
   Readings: Campbell, et al., pp. 331-356

32. Nov 11 (F) ► ► ► Third Hour Exam ◄ ◄ ◄

PART IV: MODERN HUMANITY

33. Nov 14 (M) Homo heidelbergensis
   General Characteristics
   Evidence for Hunting
   Culture and Society
   Readings: Campbell, et al., pp. 311-330
   (START reading Kurtén’s and Auel’s novels)

34. Nov 16 (W) The Neandertals
   Anatomical Characteristics
   Distribution
   Readings: Campbell, et al., pp. 357-388
   (reading Kurtén’s and Auel’s novels)

35. Nov 18 (F) The Neandertals
   Cultural Developments
   Readings: Campbell, et al., pp. 357-388
   (reading Kurtén’s and Auel’s novels)

36. Nov 21 (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 and Auel’s novels)

37. Nov 28 (M) 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 reading Kurtén’s and Auel’s novels)

38. Nov 30 (W) The Human Condition
   Domestication of Plants and Animals
   Cites, States, and Civilizations
   Readings: Campbell, et al., pp. 438-446
39. Dec 2 (F) Contemporary Biological Variation
   Methods for Studying Traits
   Some Simple Physical Variations
   Clinal Distributions
   Readings: Campbell, et al., pp. 446-454

40. Dec 5 (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 7 (W) The Concept and Meaning of Race
   Biological Race vs. Social Race vs. Ethnic Identity
   Race and IQ
   Readings: Campbell, et al., pp. 460-466

42. Dec 9 (F) *** Paper Assignment due ***
   Course Summary & Student Evaluations

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.