Course Outline for Anthropology 1L

BIOLOGICAL/PHYSICAL ANTHROPOLOGY LABORATORY

Catalog Description:

ANTH 1L - Biological/Physical Anthropology Laboratory 1.00 units

Laboratory activities and exercises developed as an adjunct to Anthropology 1 (Introduction to Biological/Physical Anthropology) including the identification of fossils through examination of fossil casts, the study of human artifacts, observation of primate behavior and structure, and problem-solving in case studies of human genetics.

Prerequisite: ANTH 1 may be taken concurrently

Strongly Recommended: Eligibility for ENGL 1A

Grading Option: Optional

Discipline:

<table>
<thead>
<tr>
<th>Units</th>
<th>Lecture</th>
<th>Laboratory</th>
<th>Clinical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1.00</td>
</tr>
<tr>
<td>Week</td>
<td>0</td>
<td>52.50</td>
<td>0.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Term</td>
<td>0</td>
<td>52.50</td>
<td>0.00</td>
<td>52.50</td>
</tr>
</tbody>
</table>

Prerequisite Skills:

None

Measurable Objectives:

Upon completion of this course, the student should be able to:

1. use tools and methodology of biological/physical anthropological inquiry;
2. identify, measure, and interpret human skeletal anatomy with an emphasis on functional and comparative evolutionary anatomy;
3. classify, identify, and analyze fossil hominids and artifacts;
4. identify the structures and behaviors of specific primate species and analyze taxonomic issues of primate phylogeny;
5. use fundamental processes of analysis in human genetics;
6. apply computer models of nonhuman primate and hominid phylogeny.

Course Content:

1. Genetics: Hardy-Weinberg Equilibrium, mitochondrial DNA studies, human population genetics
2. Human osteology
3. Anthropometry and osteometry
4. Human skeletal variation and forensic anthropology
5. Biological classification
6. Comparison of skeletons of quadrupeds, bipeds and brachiators
7. Comparison of living primates' anatomy
8. Observation of living primates: behavior and morphology
9. Primate evolution
10. Early hominin/d evolution; evolution of bipedalism
11. Evolution of the genus Homo; biocultural evolution

Methods of Presentation:

1. Examination of hominid skeletal material, fossil casts, and artifacts
2. Internet workshops on population genetics, primate structure and behavior
3. Genetic exercises
4. Zoo observation exercises
5. Group work/Problem-solving activities
6. Hands-on Activities

Assignments and Methods of Evaluating Student Progress

1. Typical Assignments
   A. Observe three different types of non-human primates (Oakland or San Francisco Zoo) and carefully record their behavior on the tally sheets provided. Make sure that you include information about these primates' taxonomy and general anatomy.
   B. You are looking at three skulls. Identify the non-human primate, the early hominin/d, and the human. Explain the criteria you used to identify each skull.
   C. Work out the following genetic problem, using a Punnett Square: a child has a hitchhiker's thumb. His parents do not. Figure out the parents' genotype/s. What are the chances that they would have a child without a hitchhiker's thumb?
   D. Compare the skulls of a modern human and a modern chimp. Identify four differences between the two, and explain the functional significance of these differences.
   E. Based on its pelvic bones, is this person a male or a female? Justify your answer with two traits.
   F. Use spreading calipers to calculate the cranial index of this specimen. Based on your calculations, is this cranium a) narrow, b) average, c) broad, d) very broad?

2. Methods of Evaluating Student Progress
Primate observation project write-up

A. Exams/Tests
B. Quizzes
C. Class Participation
D. Laboratory exercises
E. Final Examination

3. Student Learning Outcomes
   Upon the completion of this course, the student should be able to:
   A. Compare and contrast primate anatomy and behavior through the examination of skeletal material and direct observation of primate behavior.
   B. Evaluate genetic data to understand inheritance and assess evolutionary processes.
   C. Evaluate human biological diversity through the application of forensic analysis to the human skeleton.
   D. Evaluate the importance and timing of human adaptations through the examination of fossil and cultural replicas.

   Textbooks (Typical):

   Special Student Materials

   Abbreviated Class Schedule Description:

   Laboratory activities and exercises developed as an adjunct to Anthropology 1 (Introduction to Biological/Physical Anthropology) including the identification of fossils through examination of fossil casts, the study of human artifacts, observation of primate behavior and structure, and problem-solving in case studies of human genetics.

   Prerequisite: ANTH 1 may be taken concurrently
   Strongly Recommended: Eligibility for ENGL 1A