Degree Applicable

Glendale Community College
March 2013

COURSE OUTLINE

Anthropology 101 (C-ID Number: ANTH 110)
Physical Anthropology (C-ID Title: Introduction to Biological Anthropology)

I. Catalog Statement

This course introduces the concepts, methods of inquiry, and scientific explanations for biological evolution and its application to the human species. Issues and topics will include, but are not limited to, genetics, evolutionary theory, human variation and biocultural adaptations, comparative primate anatomy and behavior, and the fossil evidence for human evolution. The scientific method serves as foundation of the course. The course may include a lab component.

Total Lecture Units: 3.0
Total Course Units: 3.0

Total Lecture Hours: 48.0
Total Faculty Contact Hours: 48

Prerequisite: Eligibility for English 120 or ESL 151.

II. Course Entry Standards

Skills Level Ranges: Reading 5, Writing 5, Listening/Speaking 5, Math 2.

Prior to enrolling in the course, the student should be able to:
1. read and understand abstract and complex collegiate level textbooks;
2. communicate learning, conceptual understanding and critical analysis skills through writing research papers, essay exams, or other types of writing assignments;
3. learn material through class lecture, discussion, and reading;
4. add, subtract, multiply, and divide using whole numbers, fractions, and decimals;
5. convert fractions and decimals to percentages.

III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:

1. describe the scientific process as a methodology for understanding the natural world;
2. define the scope of anthropology and discuss the role of biological anthropology within the discipline;
3. identify the main contributors to the development of evolutionary theory;
4. explain the basic principles of Mendelian, molecular and population genetics;

5. evaluate how the forces of evolution produce genetic and phenotypic change over time;
6. demonstrate an understanding of classification, morphology and behavior of living primates;
7. summarize methods used in interpreting the fossil record, including dating techniques;
8. recognize the major groups of hominin fossils and describe alternate phylogenies for human evolution;
9. identify the biological and cultural factors responsible for human variation.

IV. <u>Course Content</u> **Total Faculty Contact Hours = 48 hours**

A. Physical Anthropology 3 hours
1. Definition of anthropology
2. Sub-disciplines of anthropology, with an emphasis on physical anthropology
3. Scientific method
4. Evolution, evolutionary theory, forerunners to evolutionary thought
5. Natural Selection and modes of selection

B. Genetics and Genetic Mechanisms of Evolution 6 hours
1. Cell biology/eukaryotic cell and organelles
2. DNA molecule/DNA synthesis/protein synthesis
3. Cell division: mitosis and meiosis
4. Chromosomal types
5. Structural and regulatory genes
6. Genotypes and phenotypes
7. Mechanisms of mendelian genetics
8. Genetic stability and variability

C. Genetics of Populations 6 hours
1. Population genetics/ concepts of gene frequency and gene pool
2. The hardy-weinberg theorem
3. Microevolutionary forces
4. Mutation and genetic recombination, natural selection, gene flow, random genetic drift
5. Balanced polymorphism
6. Macroevolution: modes and tempos of speciation

D. Order Primates 6 hours
1. Taxonomy and Classification of Humans and Non-Human Primates
2. Five categories of primates
3. Non-human primate distribution
4. Ancestral and derived traits
5. Prosimians, new world monkeys and old world monkeys

E. Our Closest Living Relatives: The Apes 6 hours
1. The lesser apes: gibbons and siamangs
2. The great apes: orangutans, gorillas, chimpanzees and bonobos
3. Conservation status, methods and concerns
4. Significance of primate behavior studies and early hominid evolution
5. Primate behavior and adaptations: mating, reproductive, communication Strategies

F. Early Hominid Evolution 6 hours
1. Cenozoic era and adaptive radiation of non-human primates and hominids
2. Bipedalism and changes to the skeleton
3. Fossilization and dating techniques
4. Early hominids and australopithecines
5. The origin of the genus homo

G. Adaptive Radiation of the Genus Homo 6 hours
1. Genus homo and species
2. Significance archaeological sites, skeletal remains and cultural artifacts
3. Behavioral firsts and paleolithic, mesolithic and neolithic tool industries
4. Migrations of the genus homo
5. The neanderthals
6. The origin of homo sapiens

H. Human Variation and Biological Adaptations 6 hours
1. The concept of race: past and present perspectives
2. Analyzing human variation
3. Adaptive significance of human phenotypes
4. Body size, pigmentation, resistance to disease, and other adaptive mechanisms
5. Biological and cultural strategies to heat, cold and altitude stress

I. Evolution: Today and Tomorrow 3 hours
1. The forces of change

V. <u>Methods of Instruction</u>

The following methods of instruction may be used in the course:
1. powerpoint, whiteboard and overhead lectures;
2. anthropological films and video clips in class or in Moodle;
3. zoo fieldtrips to observe primates and their behaviors;
4. showing casts and bones of hominids and primates;
5. interactive resources in Moodle (e.g. Practice genetics problem solving, Population Genetics online activities, Anthropology video clips, animations of physical anthropology concepts (DNA synthesis, Protein synthesis, etc).

VI. Out of Class Assignments

The following out of class assignments may be used in the course:

1. homework Assignments (e.g. Genetics/Cell Biology assignment and Group Primate Research Project based on empirical observations of primates at the zoo);
2. extra credit options (e.g. Attending SI sessions, Gibbon Center Tour, attending primate lectures at the SCPRF, volunteering at Orangutan 5K Race during the fall semester, attending hominid lectures at the Natural History Museum in Los Angeles during the spring semester).

VII. Methods of Evaluation

The following methods of evaluation may be used in the course:

1. quizzes
2. midterm examinations and a cumulative final examination (e.g. multiple choices, true/false, and matching format);
3. essays regarding reading assignments (e.g. approximately 15-18 articles).

VIII. Textbooks

Larsen, Clark Spencer. *Our Origins: Discovering Physical Anthropology Second Edition.* New York: W.W. Norton and Company, 2010. Print.
13th Textbook Grade Reading Level. ISBN-10-0393934985

IX. Student Learning Outcomes

Upon successful completion of the required coursework in Physical Anthropology, the student will be able to:

1. summarize the scope of physical anthropology;
2. discuss the genetic mechanisms and the dynamics of evolution;
3. outline the principles of cell biology;
4. describe the forces of evolution and the formation of species;
5. assess primate radiation and compare the evolution of primate social behaviors;
6. discuss the reasons for studying non-human primates and conservation strategies;
7. interpret the molecular evolution of primates;
8. analyze the geologic record of fossil forms leading to the characteristic structure of modern Homo sapiens;
9. identify human variation at the individual and group levels;
10. critic the evolutionary aspects of human health and disease and, interpret the implications of current and future forces of change.

Justification

ANTHR 101 is a required course for the Associate in Arts for Transfer degree in Anthropology. This course is related to the college goal of continuing the development

of AA and AS-T degrees. The Anthropology AA-T degree is accepted by the California State Universities to which our students most frequently transfer.