Ohio Articulation Number (OAN)
Course Submission Form
2006-2007

College/University  Kent State University

Course(s) Submitted (Title & Course #)  Human Evolution Anth 18630  for
Ohio Articulation Number  OSS 002

Date  9.29.06  Course  1  of a  1  Course OAN mapping.

Name and title of individual submitting on behalf of the college/university

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Credit Hours  3  qtr  _____  sem  X
Lecture Hours  3
Laboratory Hours  (if applicable)
Pre-Requisites(s) Course work (if applicable)
none

Placement Score (if applicable)
(Name of test)
(Domain)  (Score)

Catalog/Course Description (Includes Course Title and Course #)
Introduction to basic evolutionary theory with a focus on the emergence and
progressive development of the human species during the last 5 million
years. Includes related topics such as primate behavior and human variation.

Texts/Outside Readings/Ancillary Materials


Course Objectives and/or Plan of Work

The objectives of Human Evolution are to inform students about evolutionary theory and how biological evolution and, more generally, science impacts their daily lives and their decision making as adults.

Students are introduced to the forces of evolution in the first week of classes and numerous examples of natural selection are given throughout the three sections of the course: 1) genetics and the foundations of inheritance; 2) behavioral evolution of humans and non-human primates; and 3) the fossil evidence for the evolution of humans.

In the first section of the course students are (often) introduced (!) to the basics of genetics (how cells divide, how gametes are formed, and the functions of DNA) and to relevant current topics such as stem cell research, cloning and medical genetics and inheritance patterns. The focus of this section is microevolution – changes in gene frequencies over time, especially with regard to natural selection.

In the second section of the course, they learn that humans are just one species in the Order Primates and humans and all living primates share a common ancestor with the earliest primates. Students learn several subdivisions of our Order as well as characteristic physical features that define primates and indicate shared inheritance and behaviors that are essential to forming strong social bonds between males and females, and parents and offspring. They are also introduced to conservation biology and the role of humans in creating change in our world.

In the third section of the course, students learn to apply Darwin’s descent with modification to the primate fossil record. More distantly related fossils are touched on, but most of this section introduces students to the fossil evidence for the evolution of the hominid family (6 million years + to about ½ million ago).

Description of Assessment and/or Evaluation of Student Learning

Students are brought into discussion during lecture periods whenever possible and encouraged to discuss ideas that might be confusing to them or topics that might conflict with their world views. They are also encouraged to bring relevant material from news stories into the classroom for discussion and they have opportunities (10 times a semester) to test their knowledge during quizzes for which they receive immediate feedback. Short discussions on problematic questions often ensue that hopefully allow time for students to sort through their ideas. We wish to help students understand where they fit in the context of different human populations and where humans fit in the
context of the world's ecologies. They need to be reminded frequently of the big picture – humans are but one species on earth that evolved using the same mechanisms as all other species. Frequent refocusing is important since the course is heavily laden with new terms and, for many of them, new ideas.

WORKING COURSE SYLLABUS: HUMAN EVOLUTION
ANTH 18630
KENT STATE UNIVERSITY, Dr. Marilyn Norconk

This first course in physical or biological anthropology draws on evolutionary theory to address issues about our evolution, morphology, development, and behavior as well as our relationships with other closely related species in the order Primates. The course is divided into three parts: a) history of evolutionary theory, basic concepts of genetics, and the genetical basis for human evolution; b) introduction to our closest living relatives, the non-human primates and the evolution of primate (including human) behavior; and c) the fossil evidence for human evolution beginning with our stem group, the non-human primates. The human story is a mere 6 million years old or so but all of our physical systems, including our brains, have a much longer evolutionary history. Thus, I will start this section by giving you some background in the evolution of primates as a mammalian order- starting at about 50 million years.

The first part of the course may be the most relevant and important to you. We know that many of the diseases that impact human health and survival today have a genetic component and that some people have genetic predispositions to resist new diseases. To put human behavior and biology into perspective I will begin the first week by discussing the history of a deceptively simple theory - the theory of natural selection. Although there are other mechanisms that contribute to evolution of organisms [and together comprise what we call “evolutionary theory”], natural selection is most pervasive because it deals with how individuals interact with their environments during the course of their lives.

The topics of this course are very accessible to you. Issues such as human disease-HIV, malaria, sickle-cell anemia, global climate change, human impacts on the environment and extinctions and new fossil discoveries are all topics that are covered weekly in news media and popular culture.

This is a "survey" course, which means that you will be introduced to new concepts at a fast pace. Also remember that this is a BASIC SCIENCE LER course and is intended to be equivalent in rigor to other science LERs in chemistry, biology, and geology. The heaviest part of the course for many people is the first third, but I encourage you to keep up with the reading and ask questions whenever - during lecture, before or after lecture, by phone or email.

I especially encourage you to enroll in the 1-unit lab (Anth 18631) that accompanies this course and get acquainted with the teaching assistants that teach that course. This course fulfills the Ohio State mandate enacted this year stating that all students must take a science lab to fulfill their graduation requirements. There are
seven sections of the lab. You attend one lab, once a week. A lab manual is available for purchase (< $10) at the Campus Copy Connection, 3rd floor library. See the schedule of classes or ask me about enrolling in this course.

WEB SUPPORT FOR THE COURSE: If you are enrolled in the course, you will have access to the course website on Vista (http://vista.kent.edu/). To log on, you will need your flash ID and your current password to get into the site. I will post handouts, reading assignments, exercises, reviews for exams and PowerPoint lectures on-line. Lectures will be available on-line prior to the lecture and for one week following the lecture. There is also a website for the text: http://wps.prenhall.com/hss_stanford_bioanthro_1. It provides you with chapter outlines and quizzes (with answers!) to test your understanding of the material. It also provides links to other useful web sites.

EVALUATION SYSTEM: I will give two exams during the semester and a final exam during final’s week. The final exam is cumulative - 30% of the questions will be taken from the first and second exams. Each exam is worth 100 points and will be a mixture of multiple choice questions and short answer questions. The final exam will contain only multiple choice questions. I will post review sheets for the exams on the web site one week before each exam. In addition to the exams, I will give 10 pop quizzes @ 5 points each - roughly 3 in section 1, 3 in section 2, and 4 in section 3.

A NOTE ON ATTENDANCE: There is no substitution for attending lecture (and there are those pop quizzes!). Please contact me if you have to miss more than two consecutive classes (mnorconk@kent.edu).

SCHEDULE OF READINGS AND LECTURES

Section 1: EVOLUTIONARY THEORY & GENETICS
Major questions to be dealt with in this section are a) how does evolution work?; b) how does change occur at the cellular level and how do these changes constrain or enable change at the level of the organism? c) why do some heritable diseases persist in human populations despite their fatal outcomes? c) what is the "environment" and what role does it have in causing changes in structures and behavior?

Week 1: Chapters 1 & 2 Introduction to the course. The concept of “adaptation”; pre-Darwinian and modern concepts of evolution and natural selection. An example of how evolution works featuring research on Galapagos finches by Rosemary and Peter Grant.

Week 2: Chapter 2 & 3
Introduction to genetics - genes, cells, chromosomes, etc. History of genetics and the connection between natural selection and genes. The four forces of evolution (natural selection, mutation, migration, and genetic drift.

Week 3: Chapter 3
**Week 4: Chapter 4 & 5**
Human reproductive biology; how inheritance works. Structure and evolutionary change at the level of populations; gene and genotype frequencies.

**Week 5: Chapter 6**
Population genetics, human polymorphisms, adaptation vs. enculturation.

**Week 6: Chapter 6 (continued)**
FIRST EXAM will consist of multiple choice, calculations, & short answers of material and chapters covered to date.

**Section 2: PRIMATE & HUMAN BEHAVIORAL ECOLOGY**

**Week 7: Ch 7**
Introduction to the living primates; how are they similar and different from other mammals; how are they classified among the other mammals. The prosimians (lemurs, lorises, tarsiers, and bushbabies). The anthropoid primates - some examples of behavior and ecology from the New and Old World: marmosets, capuchins and spider monkey of South America, and gray langurs and baboons from Africa and Asia. Download PRIMATE handout from Vista.

**Week 8: Ch 7 (continued)**
The apes: gibbons and orang utans; chimpanzees, bonobos, and gorillas. Primate social organization.

**Week 9: Ch 8**
Primate ecology: feeding and predation.

**Week 10: Ch 8 (continued)**

**Week 11: Nov 6**
Primate behavioral ecology – kin selection; altruism. SECOND EXAM: Bring #2 pencil: multiple choice, matching & short answer questions.

**Section 3: FOSSIL EVIDENCE FOR PRIMATE & HUMAN EVOLUTION:**
Who are our closest living relatives? How do the primate fossils inform us about living primates and ourselves? What were our ancestors like? How much have we changed in the past 6 million years (origin of our family); the last 2 million years (origin of the genus Homo) and the last 500,000 years (origin of our species)? When did we first speak, lose much of our body hair, and develop recognizable human behaviors?

**Week 12: Ch 9 & 10**
Introduction to macroevolution, the fossil record and the evolution of early primates. The early period: Cretaceous through the Eocene. Direct and inferential methods used in dating older and more recent fossils. The Oligocene and Miocene.

**Week 13: Ch 11 & 12**
The australopithecines - history of discovery, anatomy of bipedalism, behavior of early hominids. Download FOSSIL HOMINID handout from Vista.

**Week 14: Ch 13 - 15**
The middle period of human evolution: *Homo habilis* and *H. erectus*. The earliest members of our own species - archaic sapiens and the neandertals.

**Week 15: Ch 16 - 18**
Evolution of language, biomedical anthropology, evolution of human behavior.

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