

Course Outline for: ANTH 1210 Human Evolution – An Introduction to Bio-Anthropology

A. Course Description

1. Number of credits: 4
2. Lecture hours per week: 4
3. Prerequisites: Recommended eligible for ENCG 1101 and READ 1106
4. Corequisites: None
5. MnTC Goals: Goal #5 History and the Social and Behavioral Sciences
Goal #10 People and the Environment

This course introduces humans as biological organisms, descended from animal ancestors and closely related to other living primates. The processes involved in evolution such as natural selection, population genetics, genetic inheritance, and biocultural adaptation will be discussed. Human ancestry, inferred from the fossil record, will be a primary focus, especially those attributes and selection pressures that led to behaviorally modern humans. Students will be involved with hands-on activities with various fossils and artifacts for this course.

B. Date last reviewed/updated: February 2022

C. Outline of Major Content Areas:

1. Charles Darwin, natural selection, and the biological evidence for evolution
2. Mendelian and molecular genetics and inheritance, including sources of variability
3. The Synthetic Theory of Evolution
4. The species concept and the nature of speciation
5. The fossil record and the history of life
6. The Primate Order: adaptation to forests and other niches
7. Primate behavior and ecology
8. Comparative osteology and comparative dentition in primates
9. Pliocene hominins: adaptations to East African paleoenvironments
10. Stone tools, culture, and *Homo habilis*
11. The Pleistocene and the peopling of Asia and Europe: *Homo erectus* and *Homo heidelbergensis*, *Homo neanderthalensis*
12. The nature of communication and the emergence of language
13. Modern *Homo sapiens* in the Pleistocene and the Holocene
14. Human genetic diversity: variation within and between geographic groups (cline; race)
15. Adaptation and selection in modern human groups
16. Basics and limits of the scientific method

D. Course Learning Outcomes:

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

1. Apply basic Mendelian and molecular genetics well enough to solve simple genetics problems and to explain evolutionary theory. (Goals 2a, 2c, 5a, 5c, 10a, 10b)
2. Outline the biological theory of evolution, spell out the logic of its argument, assess its radicalness, and critique it. (Goals 2a, 2b, 2c, 2d, 5a, 5c, 5d, 10a, 10b, 10d)
3. Chart the main environments and climate shifts and their effects on hominid evolution from about 4 million to ten thousand years ago. (Goals 2a, 2c, 5a, 5c, 10a, 10b, 10d)
4. Describe various non-human primates, their behavior and ecology, and thereby identify distinctive human traits and adaptations. (Goals 2a, 2b, 2c, 2d, 5a, 5b, 5c, 5d, 10a, 10b, 10d)
5. Explain the issues in biological classification and gain some expertise in identifying and classifying skeletal materials pertaining to contemporary primates as well as the fossil record of primate and human evolution. (Goals 2a, 2b, 2c, 5a, 5b, 10a, 10b, 10c)
6. Trace hominid evolution in the fossil record from the earliest forms through Homo sapiens and to evaluate classification schemes and controversies. (Goals 2a, 2b, 2c, 2d, 5a, 5c, 5d, 10a, 10b, 10d, 10e)
7. Discover interactions between climatological and environmental factors and human sociocultural adaptations. (Goals 2a, 2b, 2c, 2d, 5a, 5b, 5f, 10a, 10b, 10c, 10d)
8. Analyze information on human variability by working with laboratory exercises. (Goals 2a, 2b, 2c, 5a, 5c, 5d, 10a, 10b, 10d, 10f)
9. Discuss the applications of physical anthropology and biocultural evolution to solving current problems and to predicting the future of our species (Goals 2a, 2b, 2c, 2d, 10b, 10d, 5a, 5b, 5d, 10b, 10d, 10e)
10. Assess solutions to past and present human environment-adaptation problems in the basis of longitudinal comparisons. (Goals 2a, 2b, 2c, 5a, 6b, 5d, 10b, 10d, 10e)

E. Methods for Assessing Student Learning:

Assessment methods may include, but are not limited to, the following formats exams, essay exams, quizzes, journals, research papers, oral presentations, written assignments, reflection essays, group work, and/or any other assessment measures based on the discretion of the instructor.

F. Special Information:

None