ANTH 120 - Biological Anthropology Course Outline

Approval Date: 03/14/2019
Effective Date: 08/14/2020

SECTION A

Unique ID Number	CCC000604711
Discipline(s)	Anthropology
Division	Arts and Humanities
Subject Area	Anthropology
Subject Code	ANTH
Course Number	120
Course Title	Biological Anthropology
TOP Code/SAM Code	2202.00 - Anthropology / E - Non-Occupational
Rationale for adding this course to the curriculum	Modifying ANTH 120 and 120-L (Biological Anthropology Laboratory) into one four-unit course.
Units	4
Cross List	*N/A*
Typical Course Weeks	18

Total Instructional Hours

	Contact Hours
Lecture	54.00
Lab	54.00
Activity	0.00
Work Experience	0.00
Outside of Class Hours	108.00

Total Contact Hours	108
Total Student Hours	216
Open Entry/Open Exit	No
Maximum Enrollment	50
Grading Option	Letter Grade or P/NP
Distance Education Mode of Instruction	On-Campus Hybrid Entirely Online Online with Proctored Exams

SECTION B

General Education Information:

SECTION C

Course Description

Repeatability May be repeated 0 times

Catalog Description This course introduces students to the theories, methods, and applications of biological anthropology. Topics include the scientific method, principles of evolution and adaptation, human genetics, human osteology, hominin species and the fossil record, and the anatomy and behavior of living non-human primates. Lab is included in this course.

Schedule Description

SECTION D

Condition on Enrollment

1a. Prerequisite(s): *None*

1b. Corequisite(s): *None*

1c. Recommended

- ENGL 90 with a minimum grade of C or better
- MATH 85 with a minimum grade of C or better

1d. Limitation on Enrollment: *None*

SECTION E

Course Outline Information

1. Student Learning Outcomes:

A. Define the scope of anthropology and discuss the role of biological anthropology within the discipline.
B. Articulate the general principles of biology and scientific inquiry as related to biological anthropology.
C. Understand the historical trajectory of human evolution based on genetic evidence, the fossil record, and advances in current biological anthropological research.
D. Identify the main contributors to the development of evolutionary theory.
E. Demonstrate basic knowledge of the principles of molecular, Mendelian, and population genetics, including the role of evolutionary forces in producing genetic and phenotypic change over time.
F. Classify humans and non-human primates according to taxonomic relationships, evolutionary origins, and shared behaviors.
G. Appreciate the environmental, biological, and cultural factors responsible for human variation.
H. Evaluate the impacts of anthropogenic activity on the natural world, and how those activities both ensure and challenge the survival of humankind.

2. Course Objectives: Upon completion of this course, the student will be able to:

A. Apply the scientific method to current debates in biological anthropology
B. Describe the principles of evolution, inheritance, and population genetics as they relate to human evolution and adaptation
C. Identify the bones of the human skeleton in terms of location, major anatomical functions, and adaptive significance
D. Describe the structure and function of DNA and RNA
E. Demonstrate appropriate anthropometric techniques in the measurement and assessment of human skeletal materials
F. Perform genetic problems including Punnett Squares, dihybrid crosses, and pedigree charts
G. Assess human skeletal materials in terms of age, sex, stature, health status, and individual variation

H. Summarize the principal State and Federal laws that apply to human remains in archaeological discoveries
I. Classify non-human primate specimens in appropriate taxonomic categories
J. Assess non-human primate anatomy and behavior
K. Evaluate observational data gathering techniques related to nonhuman primates
L. Evaluate the anatomical, evolutionary, and adaptive significance of various hominin species
M. Assess the links between prehistoric stone tool industries and the biocultural evolution of the genus Homo
N. Describe bioarchaeology and forensic anthropology as subfields of biological anthropology
O. Identify the main contributors to the development of evolutionary theory
P. Evaluate alternate phylogenies for human evolution
Q.

3. Course Content

LECTURE COURSE CONTENT:

A. Scientific method and the biocultural perspective
    a. Fact, hypothesis, theory
    b. Inductive and deductive approaches
    c. Data gathering, hypothesis formation, experimentation, replicability
B. Review of basic principles of cell biology
    a. Cell biology
    b. DNA structure
    c. DNA replication
    d. Protein synthesis
    e. Mitosis and meiosis
    f. Chromosomal and genetic mutation
C. Principles of genetic inheritance
    a. Mendelian inheritance in humans
    b. Simple traits
    c. Co-dominant traits
    d. Sex-linked traits
    e. Punnett's square
    f. Population genetics
D. Principles of evolution and adaptation
    a. Microevolution and macroevolution
    b. Mechanisms/forces of evolution
E. Human osteology
    a. Anatomical terms of location in humans (directional terms, planes, lines, etc.)
    b. Cranial material
    c. Postcranial material
F. Human variation
    a. Patterns and causes of human variation
    b. Principles of anthropometrics
    c. Forensic anthropology
    d. Human remains in archaeological discoveries
        a. NAGPRA
        b. AB 978 (CAL NAGPRA)
        c. Sections of the Health and Safety and Public Resources Codes in California

G. Non-human primates
    a. Taxonomy of primates
    b. Anatomy of non-human primates and patterns of locomotion
    c. Behavior of non-human primates
    d. Observational techniques for behavior of non-human primates
H. Hominins and the fossil record
    a. Processes of preservation
    b. Dating techniques
    c. Morphological and cultural evolutionary trends of hominins
    d. Morphology, culture and location of various hominin fossils including:
        a. Sahelanthropus
        b. Orrorin
        c. Ardipithecus
        d. gracile and robust Australopithecines
        e. Paranthropus
        f. Kenyanthropus
        g. Neanderthalensis and early Homo
    e. Stone tool industries and techniques (Oldowan, Acheulian, Lavallois, etc.)

LABORATORY COURSE CONTENT:

A. Genetics and Evolution
    a. The Scientific Method
    b. Cell Biology and DNA
    c. Principles of Inheritance
    d. Human Variation
    e. Hardy-Weinberg: Population Genetics
    f. Performing metric conversions, genotype/phenotype ratios
B. The Human Skeleton
    a. Introduction to the Human Skeleton
    b. The Appendicular Skeleton
    c. The Axial Skeleton
    d. Human Variation, Anthropometry, and Forensic Anthropology
C. The Non-Human Primates
    a. Primate Classification
    b. Comparative Primate Anatomy
    c. Primate Behavior
D. Human Ancestors
    a. The Bipedal Adaptation and Our Earliest Ancestors
    b. The Rise of the Genus Homo
    c. Later Homo and Modern Human Origins
    d. Stone Tool Technologies
    e.

4. Methods of Instruction:

Activity:
Critique:
Discussion:
Experiments:
Field Experience:
Field Trips:

Individualized Instruction: Supplemental Instruction (if available), focused work during office hours, for example.
Lab:
Lecture:
Mediated Learning:
Observation and Demonstration:
Projects: Special projects may be offered to students.
Visiting Lecturers:
Other: The lecture content may be delivered through Canvas using the E-book or textbook, lecture slides, recorded video, online charts, graphs, and maps, and online laboratory software (such as MyAnthroLab).

5. Methods of Evaluation: Describe the general types of evaluations for this course and provide at least two, specific examples.

Typical classroom assessment techniques

Exams/Tests --
Quizzes --
Research Projects --
Portfolios --
Papers --
Oral Presentation --
Projects --
Field Trips --
Simulation --
Class Participation --
Class Work --
Lab Activities --
Final Exam --

Additional assessment information:

Objective, multiple-choice examinations with short answer and matching components. Other types of assessments as appropriate(for example: quizzes on textbook material, group projects, and film study guides).

For example:
1. Identify on the map quiz the locations of the following hominid discoveries: Java Man, the Black Skull, Lucy, Neanderthal, and the Taung Child.
2. Discuss in a short paragraph the major anatomical shifts that enabled bipedalism among early modern humans.

Letter Grade or P/NP

6. Assignments: State the general types of assignments for this course under the following categories and provide at least two specific examples for each section.

A. Reading Assignments
Reading assignments may include case studies, textbook readings and additional relevant supplementary materials (for example: peer-reviewed articles, websites, newspaper articles, etc.)

For example:
1. Read the "In Focus" section of Chapter Three, which discusses Darwin's Voyage of the Beagle.

2. Read pages 136-149 of Chapter Nine, paying specific attention to the geographic location of major australopithecine fossil sites.

B. Writing Assignments
Writing assignments may include case study analysis, research reports on ethical issues in biological anthropology, and summaries of textbook chapters.

For example:
1. Compare and contrast at least two different attempts to classify humans using skin color. What criteria did you use to classify the different colors? How can clinal analyses of skin color help mitigate the difficulties?
2. Explain the role that mitochondrial DNA (mtDNA) plays in research on human migration, particularly the peopling of the "New World."

C. Other Assignments
Faculty may elect to supplement classroom activities with field observation projects, class trips and/or guest speakers.

For example:
1. Campus presentation by primatologists, coupled with excerpts from "Gorillas in the Mist," an account of the life of Dian Fossey, a primatologist from the Bay area.
2. Field trip to the primatology exhibit, such as the Exploratorium in San Francisco or the Family Lemur Forest exhibit at the San Francisco Zoo.
3. Forensic/Investigative Techniques demonstrations linked with the Criminal Justice Training Center or Criminal Investigations courses on campus.

7. Required Materials

A. EXAMPLES of typical college-level textbooks (for degree-applicable courses) or other print materials.

Book #1:
Author: Jurmain, R., L. Kilgore, W. Trevathan
Title: Essentials of Physical Anthropology
Publisher: Cengage Learning
Date of Publication: 2018
Edition: 15

Book #2:
Author: Stanford, C., J. Allen, S. Anton
Title: Biological Anthropology: The Natural History of Humankind
Publisher: Pearson Higher Education
Date of Publication: 2017
Edition: 4

Book #3:
Author: Marks, J.
Title: The Alternative Introduction to Biological Anthropology
Publisher: Oxford University Press
Date of Publication: 2017
Edition: 2

Manual #1:
Author: Walker-Pacheco, S.
Title: Exploring Physical Anthropology: A Laboratory Manual & Workbook

Publisher: Morton Publishing (ISBN 9781617314032)
Date of Publication: 01-01-2017

Manual #2:
Author: Soluri, K., Agarwal, S.
Title: Laboratory Manual and Workbook for Biological Anthropology
Publisher: W.W. Norton and Company, Inc. (ISBN 9780393912913)
Date of Publication: 01-01-2015

Software #1:
Title: MyAnthroLab for Biological Anthropology
Publisher: Pearson
Edition: 2013

B. Other required materials/supplies.

- Equivalent Open Educational Resource (such as those supported by the Community College Consortium for Open Educational Resources).