College of San Mateo
Official Course Outline

1. **COURSE ID:** ANTH 125 **TITLE:** Biological Anthropology **C-ID:** ANTH 110
   Units: 3.0 units **Hours/Semester:** 48.0-54.0 Lecture hours; 96.0-108.0 Homework hours; 144.0-162.0 Total Student Learning hours
   Method of Grading: Grade Option (Letter Grade or Pass/No Pass)

2. **COURSE DESIGNATION:**
   Degree Credit
   Transfer credit: CSU; UC
   AA/AS Degree Requirements:
   CSM - GENERAL EDUCATION REQUIREMENTS: E5a. Natural Science
   CSU GE:
   CSU GE Area B: SCIENTIFIC INQUIRY AND QUANTITATIVE REASONING: B2 - Life Science
   IGETC:
   IGETC Area 5: PHYSICAL AND BIOLOGICAL SCIENCES: B: Biological Science

3. **COURSE DESCRIPTIONS:**
   Catalog Description:
   Biological consideration of the origin, development, and potential survival of humans and other primates. Topics include concepts of evolution: natural selection and populations, patterns of inheritance, the fossil record, and behavioral adaptations. The course will examine how biological, physical, and cultural variations have allowed human populations to adapt to various physical environments.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
   Upon successful completion of this course, a student will meet the following outcomes:
   1. Explain (orally and in writing) the relationship and intersection of genetic diversity, evolution, natural selection, and the environment among other themes as they relate to primates and hominins (archaic and modern) in the biological continuum.
   2. Analyze, explain (orally and in writing), and apply key anthropological theories, concepts and terms to various physical anthropology issues.
   3. Communicate knowledge of physical anthropology by using written, oral and other technologically oriented modalities.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
   Upon successful completion of this course, a student will be able to:
   1. Define significant scientific concepts as they relate to biological anthropology (formerly known as physical anthropology) and human diversity.
   2. Recognize and apply principles of the scientific approach to the study of humankind.
   3. Identify central issues and problems related to the major concepts in the study of human biology.
   4. Critically analyze and evaluate data as it pertains to anthropological research.
   5. Critically analyze and discuss contemporary issues and problems as they relate to biological diversity and global survival.

6. **COURSE CONTENT:**
   Lecture Content:
   1. Introduction: What is anthropology?
      a. Cultural Anthropology
      b. Linguistic Anthropology
      c. Archaeology
      d. Physical Anthropology
   2. Physical Anthropology and Scientific Method
   3. The Anthropological Perspective
   4. The Development of Evolutionary Theory
      a. Overview of evolutionary thought
      b. The scientific revolution
      c. The Path to Natural Selection
   5. Natural Selection

a. Strength of genetic diversity
b. Adaptations
c. Natural Selection in Action

6. The Biological Basis of Life
   a. The cell
   b. DNA structure
   c. DNA replication
   d. Protein synthesis
7. Cell division
   a. Mitosis
   b. Meiosis
   c. Meiosis ensures population diversity
8. Heredity and Evolution: The genetic principles discovered by Mendel
   a. Segregation
   b. Dominance and Recessiveness
   c. Independent Assortment
9. Mendelian inheritance in humans
   a. Polygenic inheritance
   b. Mitochondrial inheritance
   c. Modern evolutionary theory
10. Factors that produce and redistribute genetic variation
   a. Mutation
   b. Gene flow
   c. Genetic drift
   d. Recombination
   e. Natural selection acts on variation
11. Overview of the Living Primates
   a. Primates as mammals
   b. Primate characteristics
12. Primate adaptations
   a. Evolutionary factors
   b. Geographical distribution and habitats
   c. Diet and teeth
   d. Locomotion
13. Survey of the living primates
   a. Primate taxonomy
   b. Prosimians (lemurs, lorises)
   c. Tarsiers
   d. Anthropoids (Monkeys, apes and humans)
   e. Hominoids (Apes and humans)
   f. Hominins, Humans
14. Primate Behavior
   a. The importance of primate studies
   b. Evolution of behavior
15. Nonhuman primate social behavior
   a. Dominance
   b. Communication
   c. Aggression
   d. Affiliative behaviors
   e. Reproduction and reproductive strategies
   f. Mothers and infants
   g. Nonhuman primate cultural behavior
   h. Primate cognitive abilities
   i. The primate continuum
16. Processes of Macroevolution: Mammalian/Primate Evolutionary History
   a. The human place in the organic world
   b. Principles of classification
   c. Definition of species
   d. Vertebrate evolutionary history
   e. Mammalian evolution

f. Major mammalian groups
g. Miocene fossil hominoids
h. Processes of macroevolution
i. Modes of evolutionary change

17. Hominid Origins
    a. Definition of hominid
    b. Bipedal adaptation
    c. Biocultural evolution: The human capacity for culture
    d. Paleoanthropology as a multidisciplinary science
    e. Dating methods
    f. Early hominids from Africa
    g. Australopithecus from East Africa
    h. Early Homo
    i. South African hominids
    j. Interpretations
    k. Taxonomic issues
18. Homo erectus and Contemporaries
    a. Homo erectus: Terminology and geographic distribution
    b. Morphology of H. erectus
    c. Historical overview of H. erectus discoveries
    d. Technological and population trends in the Middle Pleistocene
19. Neandertals and other Archaic Homo sapiens
    a. Early archaic H. sapiens
    b. Middle Pleistocene evolution and culture
    c. Neandertals: Late Archaic H. sapiens
20. Culture of Neandertals
    a. Technology
    b. Settlements
    c. Subsistence
    d. Symbolic
    e. Behavior
    f. Burials
    g. Genetic evidence
21. Evolutionary trends in the genus Homo
22. Homo Sapiens Sapiens
    a. The origin and dispersal of anatomically modern humans
    b. The earliest H. s. sapiens discoveries
23. Technology and art in the Upper Paleolithic
    a. Africa
    b. Europe
24. Human Variation and Adaptation
    a. Historical views of Human variation
    b. Concepts of “race”
    c. Racism
    d. Intelligence
    e. Contemporary interpretations of human variation
    f. Human biocultural evolution
    g. Population genetics
    h. The adaptive significance of human variation
    i. The continuing impact of infectious disease
25. Anthropological Perspectives on the Human Life Course
    a. Fundamentals of growth and development
    b. Nutritional requirements for growth
26. Other factors influencing growth
    a. Genetics
    b. Hormones
    c. Environmental factors
27. The human life cycle
28. Individuals, Society, and Evolution
29. Perspectives on the Past and the Future

a. Humans and the impact of culture
b. Loss of biodiversity

30. Current crises:
a. Overpopulation
b. Greenhouse effect and global warming
c. Role of Applied Anthropology

7. **REPRESENTATIVE METHODS OF INSTRUCTION:**

Typical methods of instruction may include:

A. Lecture
B. Activity
C. Discussion
D. Field Trips
E. Guest Speakers

8. **REPRESENTATIVE ASSIGNMENTS**

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

Students write essays in the exam content, for example, "Develop a critical essay on how melanin is a response to natural selection."

Evolutionary anthropological concepts are approached from an interdisciplinary framework that addresses the dynamic complexity of diversity within and across populations. Through reading, discussion and lectures, instructors expose student to such concepts as evolution by natural selection, biocultural evolution, the biological continuum, the structure and function of DNA, humans place among the primates and the hominid fossil record. Assignments may include but are not limited to:

1. Develop a critical essay on how melanin is a response to natural selection, how biocultural evolution is illustrated in the fossil record, or how primates show the capacity for cultural behavior.
2. Assigned study questions relative to lecture/discussion, text, or source reading assignments. These might lead to in or out of class examinations, or the completion of research projects.

Students write notes on films viewed related to course content, and write summaries of articles they read that are related to course content and comment on each other's summaries.

Reading Assignments:

Weekly reading assignments from the assigned textbooks.

Reading in texts, primary sources, and/or Internet sources for a research paper, fossil table, and/or primate observation worksheet. Students read comments made on their article summaries by other students.

Other Outside Assignments:

Assigned library research for in-class or out of class writing assignments or group presentation

Active participation in classroom discussions, which would demand the reading in advance of texts, primary sources, and/or study questions. The understanding of lecture/discussion materials entails the previous identification of key concepts and an analysis and assessment of the relevant issues.

Assess and interpret the content of audiovisual presentations.

Attend campus wide or community presentations, exhibitions, zoo or animal research facility.

Website research projects and assignments.

9. **REPRESENTATIVE METHODS OF EVALUATION**

Representative methods of evaluation may include:

A. Class Participation
B. Exams/Tests
C. Group Projects
D. Oral Presentation
E. Papers
F. Projects
G. Quizzes
H. Written examination

10. **REPRESENTATIVE TEXT(S):**

Possible textbooks include:

A. Jurmain, R., Kilgore, L.. *Introduction to Physical Anthropology*, 15th ed. Wadsworth/Cengage Publishers, 2018
B. Jurmain, R., Kilgore, L.. *Essentials of Physical Anthropology*, 15th ed. Wadsworth/Cengage Publishers, 2018
C. Larsen, Clark Spencer. *Essentials of Biological Anthropology*, 10th ed. W. W. Norton and Co. Publishers, 2019

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Course Originator: Michele Titus