ANTH G185: PHYSICAL ANTHROPOLOGY

Item	Value
Top Code	220200 - Anthropology
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Local General Education (GE)	• GWC Physical Universe*** (GB1)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5B Biological Sciences (5B)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5B Biological Sciences (5B)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B2 Life Science (B2)

Course Description

This course examines primate biology, human evolution, and biocultural variation through the theories, methods, and applications of physical anthropological inquiry. Foundational topics include molecular biology, genetics, living non-human primates, primate behavior, the fossil record, early primates, bipedal ancestors of humans (i.e., hominins), Neanderthals, archaic humans, and forensic anthropology. Cumulative topics include microevolutionary variations of modern humans (e.g., race), impacts of modern lifeways on human health, and the intersections between human biology, culture, and the environment. ADVISORY: ANTH G185L. Transfer Credit: CSU; UC. C-ID: ANTH 110. **C-ID:** ANTH 110.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Assess the importance of the multidisciplinary approach to physical anthropological inquiry.
3. Estimate the influence of historical context on foundational concepts of evolution.
4. Compare the processes of mitosis and meiosis.
5. Differentiate between Mendelian and polygenic genes.

Course Objectives

- 1. Describe the scientific method, and explain the philosophical constraints and practical applications of scientific processes to the field of physical anthropology.
- 2. Explain the fundamental processes of biological evolution, including the basic principles of Mendelian, molecular, and population genetics.
- 3. Compare and contrast non-human primate and human behaviors, and describe the related implications for hominin and human evolutionary pathways.
- 4. Compare and contrast key specimens and morphological features of non-human primates, hominins, and humans.
- 5. Explain the various methods for dating and identifying non-human primate, hominin, and human fossilized remains.
- 6. Explain biocultural evolution, and describe how modern human variation has been shaped by this process.
- 7. Discuss current bioethical issues, including human biological and behavioral interconnectedness with other life-forms.

Lecture Content

Introduction to Physical Anthropology Introduction The Human Connection Biocultural Evolution What is Anthropology. Cultural Anthropology Archaeology Linguistic Anthropology Physical Anthropology Applied Physical Anthropology Physical Anthropology and the Scientific Method Anthropological Perspective The Development of Evolutionary Theory A Brief History of Evolutionary Thought The Scientific Revolution Precursors to the Theory of Evolution The Discovery of Natural Selection In Darwins Shadow Natural Selection Natural Selection in Action Constraints of Nineteenth-Century Evolutionary Theory Opposition to Evolution Today A Brief History of Opposition to Evolution in the United States The Biological Basis of Life Cells DNA Structure Coding and Noncoding DNA DNA Replication Protein Synthesis What is a Gene. Regulatory Genes Cell Division Chromosomes Mitosis Meiosis New Frontiers Heredity and Evolution The Genetic Principles Discovered by Mendel Segregation Dominance and Recessiveness Independent Assortment Mendelian Inheritance in Humans Misconceptions about Dominance and Recessiveness Polygenic Inheritance Genetic and Environmental Factors Mitochondrial Inheritance Modern Evolutionary Theory The Modern Synthesis A Current Definition of Evolution Factors that Produce and Redistribu te Variation Mutation Gene Flow Genetic Drift and Founder Effect Recombination Natural Selection Is Directional and Acts on Variation Review of Genetics and Evolutionary Factors Processes of Macroevolution How We Connect: Discovering the Human Place in the Organic World Principles of Classification Constructing Classifications and Interpreting Evolutionary Relationships Comparing Evolutionary Systematics with Cladistics An Example of Cladistic Analysis: The Evolutionary History of Cars and Trucks Using Cladistics to Interpret Real Organisms Definition of Species Interpreting Species and Other Groups in the Fossil Record Recognition of Fossil Species Recognition of Fossil Genera What Are Fossils and How Do They Form. Vertebrate Evolutionary History: A Brief Summary Mammalian Evolution The Emergence of Major Mammalian Groups Processes of Macroevolution Adaptive Radiation Generalized and Specialized Characteristics Working Together: Microevolution and Macroevolution An Overview of Primates Introduction Primate Characteristics Primate Adaptations Evolutionary Factors Geographical Distribution and Habitats Diet and Teeth Locomotion Primate Classification A Survey of the Living Primates Lemurs and Lorises Tarsiers Anthropoids: Monkeys, Apes, and Humans Hominoids: Apes and Humans Endangered Primates Primate Behavior Introduction The Evolution of Behavior Some Factors That Influence Social Structure Why Be Social. Primate Social Strategies Primate Social Behavior Dominance Communication Aggressive Interactions Affiliation and Altruism Reproduction and Reproductive Behaviors Female and Male Reproductive Strategies Sexual Selection Infanticide as a Reproductive Strategy. Mothers, Fathers, and Infants Primate Cultural Behavior Language The Evolution of Language The

Primate Continuum Primate and Hominin Origins Early Primate Evolution Eocene Primates: Closer Connections to Living Primates Oligocene Primates: Anthropoid Connections Miocene Fossil Hominoids: Closer Connections to Apes and Humans Understanding the Human Connection to Other Primates and Ways We Differ: Biocultural Evolution Discovering Human Evolution: The Science of Paleoanthropology Early Hominin Tools Connecting the Dots Through Time: Paleoanthropological Dating Methods Understanding our Evolutionary Connections: Whats a Hominin. Whats in a Name. Walking the Walk: The Bipedal Adaptation The Mechanisms of Walking on Two Legs Digging For Connections: Early Hominins from Africa Pre-Australopiths (6.0-4.4 mya) Australopiths (4.2-1.2 mya) Australopithecus afarensis Later More Derived Australopiths (3.0-1.2 mya) New Connections: A Transitional Australopith. Closer Connections: Early Homo (2.0-1.4 mya) Interpretations: What Does It All Mean. Seeing the Big Picture: Adaptive Patterns of Early African Hominins The First Dispersal of the Genus Homo: Homo erectus and Contemporaries A New Kind of Hominin The Morphology of Homo erectus Body Size Brain Size Cranial Shape The First Homo erectus: Homo erectus from Africa Who Were the Earliest African Emigrants. Homo erectus from Indonesia Homo erectus from China Zhoukoudian Homo erectus Cultural Remains from Zhoukoudian Other Chinese Sites Asian and African Homo erectus: A Comparison Later Homo erectus from Europe Technological Trends During Homo erectus Times Seeing the Connections: Interpretations of Homo erectus Premodern Humans When, Where, and What The Pleistocene Dispersal of Middle Pleistocene Hominins Middle Pleistocene Hominins: Terminology Premodern Humans and Homo heidelbergensis Fossils of the Middle Pleistocene Africa Europe Asia A Review of Middle Pleistocene Evolution Middle Pleistocene Culture Neanderthals: Premodern Humans of the Late Pleistocene Western Europe Central Europe Western Asia Central Asia Culture of Neanderthals Technology Subsistence Speech and Symbolic Behavior Burials Molecular Connections: The Genetic Evidence Seeing Close Human Connections: Understanding Premodern Humans The Origin and Dispersal of Modern Humans Approaches to Understanding Modern Human Origins The Regional Continuity Model: Multiregional Evolution Replacement Models The Earliest Discoveries of Modern Humans Africa The Ne ar East Asia Australia Central Europe Western Europe Something New and Different: The "Little People" Technology and Art in the Upper Paleolithic Europe Africa Summary of Upper Paleolithic Culture Human Variation and Adaptation Historical Views of Human Variation The Concept of Race Contemporary Interpretations of Human Variation Human Polymorphisms Polymorphisms at the DNA Level Human Biocultural Evolution Population Genetics The Adaptive Significance of Human Variation Solar Radiation and Skin Color The Thermal Environment High Altitude Infectious Disease Paleopathology: What Bones Can Tell Us About Ancient Diseases and Injury The Continuing Impact of Infectious Disease Legacies of Human Evolutionary History: Effects on the Individual Introduction Evolved Biology and Contemporary Lifestyles: Is There a Mismatch. Biocultural Evolution and the Life Course Human Growth and Development Today and in the Past Nutritional Requirements for Growth Other Factors Influencing Growth and Development: Genes and Environment Epigenetics Hormones The Human Life Cycle Pregnancy, Birth, and Infancy Childhood Adolescence Adulthood Aging and Longevity Effects of Technology on the Brain Are We Still Evolving. The Human Disconnection Human Impact on the Planet and Other Life-Forms Humans and the Impact of Culture Global Climate Change Impact on Biodiversity Acceleration of Evolutionary Processes Looking for Solutions Is There Any Good News.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

Objective and subjective tests, critical thinking writing assignments, classroom activities, and/or group projects/presentations.

Reading Assignments

Course textbook, assigned articles, relevant websites

Writing Assignments

Critical thinking written assignements and/or short answer essay questions.

Out-of-class Assignments

Assigned reading, critical thinking written assignments, and/or group projects.

Demonstration of Critical Thinking

Analysis of biological mechanisms which lead to changes in gene frequencies (evolution) through time. Synthesis of genetic, ethological and archaeological data. Differentiation of primate development utilizing models of human evolution.

Required Writing, Problem Solving, Skills Demonstration

Essay examinations are designed to test student recognition of terms and their application of terms and their application and synthesis in the explanation of physical anthropological phenomena.

Eligible Disciplines

Anthropology: Masters degree in anthropology or archaeology OR bachelors degree in either of the above AND masters degree in sociology, biological sciences, forensic sciences, genetics or paleontology OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Jurmain/Kilgore/Trevathan. Essentials of Physical Anthropology, 9th ed. Cengage, 2013 Rationale: .