ANTH G185L: PHYSICAL ANTHROPOLOGY LAB

Item	Value
Curriculum Committee Approval Date	11/19/2024
Top Code	220200 - Anthropology
Units	1 Total Units
Hours	54 Total Hours (Lab 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
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5C Laboratory Activity (5C)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5C Laboratory Activity (5C)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B3 Laboratory Activity (B3)

Course Description

This course examines concepts presented in Physical Anthropology, ANTH G185, through supplemental and practical laboratory exercises. Topics include the scientific method, applied evolutionary theory, cellular structure and function, DNA, protein synthesis, cellular division, inheritance processes, evolutionary forces, skeletal analysis, bioarcheology, forensic anthropology, comparative osteology, primatology, fossil primates, hominin ancestors, anatomically modern humans, and biocultural variations of modern humans. PREREQUISITE: ANTH G185 or concurrent enrollment. Transfer Credit: CSU; UC. C-ID: ANTH 115L. **C-ID:** ANTH 115L.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Assess the value of the scientific method for morphological analyses of primate remains.
3. Diagram the form and function of organelles in eukaryotic animal cell.
4. Examine the steps of protein synthesis.
5. Differentiate the outcomes of mitosis and meiosis cellular division.

Course Objectives

- 1. Distinguish the scientific principles of physical anthropology.
- 2. Describe the key components of a cell.
- 3. Explain the biochemical processes of DNA replication and protein synthesis.
- 4. Differentiate between mitosis and meiosis cellular division.
- 5. Examine key inheritance factors of human evolution.
- 6. Evaluate the major forces of evolution.
- 7. Identify key characteristics of skeletal anatomies.
- 8. Distinguish demographic markers of the human skeleton.
- 9. Examine key morphological markers of primate teeth and skulls.
- 10. Organize the genealogical tree of the primate order.
- 11. Evaluate observable behavior of living non-human primates.
- 12. Assess the fossil record evidence and context of early primates.
- 13. Compare key morphological characteristics of various early bipedal hominins.
- 14. Evaluate the similarities and differences between the early member of the genus Homo.
- 15. Evaluate the impacts of modern society on human biology.

Lecture Content

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Lab Content

Physical Anthropology as a Science Scientific Method Process of Evolution Evolutionary Theory as a Science Measuring Evolutionary Success Evolution and Human Ancestry The Organism and the CellB Basic Body Plan Cells Chromosomes Organism, Cells, and Chromosomes The Double Helix Genetic Material Protein Synthesis Mutations How Cells are Made Cell Division Chromosomal Aberrations Inheritance Gregor Mendel Autosomal Traits Blood Typing Sex-Linked Traits Pedigrees Genetics Recap Major Forces of Evolution Natural Selection Mutation Migration (Gene Flow) Random Genetic Drift The Bones Within Us Functions of the Skeleton What Can We Tell from Bone? Classification, Development, and Anatomy of Bone Anatomical Terminology Features of Bone Axial Skeleton The Skull Vertebral Column Thorax Appendicular Skeleton Forensic Anthropology Measuring Human Biological Variation Anthropometric Techniques Male or Female? How Old Were They? Determining Ancestry How Tall Were They? Comparative Osteology Evidence from the Teeth and Skull Evidence from the Postcranial Skeleton Biological Classification and the living Primates Establishing Evolutionary Relationships Biological Classification Alternative Classification Schemes The Order Primates Observing the Behavior of Living Primates Captive Primates Preparation Primate Behavioral Observations Focal Animal Instantaneous Sampling Scan Sampling Early Primates from the Paleocene through the Miocene Geological Time Scale Plate Tectonics Primate Beginnings (66 to 56 mya) "True" Primates of the Eocene (56 to 34 mya) Other Eocene Primates from Africa, Asia, and Europe Oligocene Primates (34 to 24 mya) Miocene Hominoids (53 to 23 mya) Who's in Our Family? The Comparative Basis Bipedalism Ape-Human Anatomical Comparisons Cranial and Dental Differences between Humans and Apes Early Members of the Human Line The Genus Homo Early Homo Later ("Archaic") Homo Neanderthals Anatomically Modern Humans Modern Human Biological Variation Intergroup Variation: Race and Ancestry Intragroup Variation: Differences among Individuals

Method(s) of Instruction

- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Reading Assignments

Lab manual.

Writing Assignments

Laboratory assignments, essay questions, and/or coursework journals.

Out-of-class Assignments

Assigned readings, essays, and/or projects.

Demonstration of Critical Thinking

Distinguish demographic characteristics of human skeletal specimins. Examine key microbiology components of human physiology. Evaluate characteristic adaptations in primate evolution.

Required Writing, Problem Solving, Skills Demonstration

Synthesize terminology, key concepts, and methods of inquiry for application to broader topics.

Eligible Disciplines

Anthropology: Master's degree in anthropology or archaeology OR bachelor's degree in either of the above AND master's degree in sociology, biological sciences, forensic sciences, genetics or paleontology OR the equivalent. Master's degree required.

Manuals Resources

1. Soluri, K.E., Agarwal, S.C. Laboratory Manual and Workbook for Biological Anthropology, 2nd edition (classic), W. W. Norton , 12-13-2019