ANTH-C1001L: BIOLOGICAL ANTHROPOLOGY LAB

Effective Term
Fall 2026

BOT Approval Date
12/11/2025

Discipline
ANTH - Anthropology

Course Number
C1001L

Course Title
Biological Anthropology Lab

Short Title
Biological Anthropology Lab

Credit Status (CB 04)
D - Credit - Degree applicable

Units

Lab Units
1.00

Total Units
1.00

Hours

Lab Contact Hours
48-54

Out of Class Hours Lab
0.00

Total Contact Hours
48 - 54

Total Out of Class Hours
0 - 0

Total Student Learning Hours
48 - 54

Is this an existing Extensive Lab?
Yes

Distance Education
No

C-ID (Admin Only)
C-ID ANTH 115L

Catalog Description
In this laboratory course, students investigate the anatomy, genetics, behavior, variation, and evolution of humans and other primates. Students apply the scientific method and use interactive exercises in this course supplement to the Introduction to Biological Anthropology lecture course.

Requisites

Pre or corequisite(s)

Prerequisite or corequisite(s) (must be taken simultaneously if not taken before)
Successful completion of or concurrent enrollment in ANTH C1001

Codes

TOP Code (CB 03)
2202.00 - Anthropology

CIP Code
45.0201 - Anthropology.

Repeatability Code
No

Grading Option
Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Anthropology (Masters Required)	End

GE Information

Check GE Types Requested
AA/AS A - Natural and Physical Sciences

Cal-GETC Areas

Approved Cal-GETC Area
AREA-5C

Learning Objectives

Learning Objectives

Learning Objective
1. Demonstrate an understanding of the scientific method and an ability to interpret data to arrive at reasoned conclusions.
2. Describe the principles of human inheritance, genetics, and evolutionary processes.
3. Identify and compare primate and hominin species in terms of their osteological, morphological, and/or behavioral adaptations.
4. Assess the major mechanisms of evolution and their impact on human evolution.
5. Differentiate parts and characteristics of the human skeleton, and apply to the use of anthropometry including differences in sex and ancestral population variation.
6. Analyze the biological and behavioral adaptations of the genus Homo, including modern human variation.
7. Describe how the phenotypic characteristics often used to indicate "race" actually relate to ecogeographical responses to environmental conditions.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Students will demonstrate how the various mechanisms of evolution provide an explanatory framework for modern human variation.

2. Students will analyze the hominin fossil evidence and apply that knowledge to an interpretation of human biological heritage.
3. Students will evaluate and synthesize evidence to draw valid conclusions.
4. Students will modify meaningful questions, originate plausible ideas, and identify underlying assumptions.

Content

Course Lab Content

Utilize laboratory activities related to lecture content in ANTH C1001. Laboratory activities will include but are not limited to:

1. Application of the scientific method
2. Investigation of cellular biology and DNA
3. Examination of the inheritance of human traits
4. Exploration of evolutionary mechanisms
5. Investigation of human osteology and forensic anthropological methods
6. Comparative analysis of anatomical and behavioral traits of non-human primates
7. Comparative analysis of hominin fossils
8. Analysis of evidence for hominin evolution
9. Investigation into human biological variation

CCN Expanded Lab Content

1. Scientific Method
2. Human Skeleton
   a. Identification of the bones
   b. Identification of bone features
   c. Basic Anthropometry/osteometry
   d. Human growth and development
3. Genetics
   a. DNA and the Cell
   b. Mitosis and Meiosis
   c. Mendelian Inheritance
   d. Pedigree Analysis
4. Mechanisms of Evolution
   a. Hardy-Weinberg Analysis
   b. Effects of Natural Selection, Mutation, Genetic Drift and Gene Flow on humans
5. Biological Classifications
   a. Comparison of phylogenetic methodologies
   b. Definition of species and other taxonomic units
6. Living Primates
   a. Comparative anatomy of Primates
   b. Analysis of primate locomotion patterns
   c. Comparison of living primate behavior
   d. Evaluation of Primate fossil record
7. Hominin Fossil Record
   a. What is a fossil?
   b. Examination of early hominin fossils (pre genus Homo)
   c. Examination of recent hominin fossils (genus Homo)
8. Modern Human Variation
   a. Evolutionary explanations for human biological diversity
   b. Analysis of biocultural evolution (evolutionary connections between tool use and speech, lactase persistence, ptc tasting, etc)
   c. Analysis of human skeletal pathologies and anomalies
   d. An anthropological view of “race”.

Methods of Instruction

Method

Activity

Integration

Hands-on exercises to apply the techniques discussed in the introductory lectures and in the Lecture class (Anth 101). These exercises will include comparisons of various hominin and primate casts, taking measurements and observational data on modern human skull casts, construction of phylogenetic trees using different methods, among others.

Method

Lab Activities

Integration

Completion of problems related to the scientific method, human variation, evolution and inheritance, phylogenetic tree construction, living primates and hominin fossils. These problems include Mendelian inheritance problems (both monohybrid and dihybrid crosses) and Hardy-Weinberg problems.

Method

Field Trips

Integration

Students may make observations at the San Diego zoo or Wild Animal park to observe human and non-human primates in a simulated natural habitat. This will allow students to develop their observational skills while they learn anthropological observational techniques.

Method

Film/video Viewing and Discussion

Integration

Watching videos on living primate diversity and hominid evolution. Because students are not able to view the main subjects of this course in the field, showing videos of living primates and paleoanthropological fieldwork demonstrates the behaviors and discoveries that are discussed in lecture.

Method

Lecture

Integration

Short lectures to orient the students to the class topic. These lectures may include slide presentations, whiteboard use or other such visual methods. Lectures will introduce the students to concepts of the scientific method, mechanisms of evolution, Mendelian inheritance, primate diversity, human skeletal adaptation and evolution of our species, recognition of the distinction between sex and gender. Lectures can also reinforce that "race" is a cultural rather than biological concept.

Methods of Evaluation

Method

Exams/Tests

Integration

The objective portions of the exams or tests (such as T/F or Multiple Choice) will evaluate the ability to understand the parameters of biological anthropology and evolutionary theory. Short answers and problem questions will be evaluated not only on whether the student provided the correct answer or not but also on the demonstrating the correct process for determining the answer (for example, the Hardy-Weinberg equation is constructed correctly even if the answer is incorrect). Identification questions are evaluated on the correct identification of the anatomical part or method. Hands-on practical questions will be evaluated on the ability of the student to complete (or attempt) the identified task (for example, taking a measurement on the skull).

Method
Class Work

Integration
Weekly lab exercises and problems will be evaluated based on the students' ability to apply anthropological techniques and concepts, such as Hardy-Weinberg population genetic problems and connecting phenotypic characteristics of human and non-human primates to their environments (including ancestral population differences in humans as well as primate locomotion adaptations to different environments).

Method
Projects

Integration
Larger projects (such as a Zoo project) will be evaluated based on the students ability to connect material identified in class and in the readings to the data that they have collected.

Method
Quizzes

Integration
Multiple choice or fill-in-the-blank questions to evaluate student understanding of terminology related to evolutionary processes such as natural selection and genetic drift.

CCN Methods of Evaluation
Examples of potential methods of evaluation used to observe or measure students' achievement of course outcomes and objectives could include, but are not limited to: laboratory exercises, practica, quizzes, projects, and research demonstrations.
Methods of evaluation are at the discretion of local faculty.

Assignments

Assignment Type
Writing

In-class and/or outside of class
In-class
Outside of class

Formative or Summative
Summative

Assignment
Based on the data you collected by observing the three primate species at the zoo, write a 4-6 page paper where you will describe the observed primates, describe the primate's enclosure, provide background information on the selected primate species, analyze the data you collected with what you know about the primates in general and the species more specifically, and describe the similarities and differences between the selected species.

Assignment Type
Reading

In-class and/or outside of class
In-class

Formative or Summative
Formative

Assignment
Using the assigned scientific article (such as Food for Thought by William Leonard in Scientific American or a similar article), identify the hypothesis the authors of the article are testing. Also identify the independent and dependent variables. Summarize your findings in a short paragraph.

Assignment Type
Other

In-class and/or outside of class
In-class

Formative or Summative
Formative

Assignment
Using a handful of items from a “junk-drawer” construct several phylogenetic trees. Identify what characteristics of the items are most important in an evolutionary context and group the items according to their morphological similarities.

Assignment Type
Other

In-class and/or outside of class
In-class

Formative or Summative
Formative

Assignment
Examine the long bones of different primate species. Calculate the intermembral index and use that information to estimate the preferred locomotor pattern of each primate.

Assignment Type
Writing

In-class and/or outside of class
In-class

Formative or Summative
Formative

Assignment
Looking at the provided karyotype, identify the sex of the individual, and consider the way in which a person's genetic karyotype might not represent their gender identity.

Course Materials

Textbooks
Textbook choice is the discretion of faculty.

Texts can include, but are not limited to, the following:
• Shook, B., Braff, L., Nelson, K., & Aguilera, K. (Eds.). (2021). Explorations Biological Anthropology Lab and Activities Manual. 1st ed.: LibreTexts / American Anthropological Association. CC BY NC (OER).
• Taylor-Hill, L. (2025). Calculations and Palpations: An Open Invitation to Biological Anthropology Laboratory. CC BY NC SA (OER).
• Soluri, K. E., & Agarwal, S. C. (2019). Laboratory Manual and Workbook for Biological Anthropology. 2nd ed.: Norton.
• Hens, S. (2021). Method and Practice in Biological Anthropology: A Workbook and Lab Manual for Introductory Courses. 2nd ed.: Pearson.
• Walker-Pacheco, S. (2022). Exploring Physical Anthropology: A Lab Manual and Workbook. 4th ed.: Morton.
• Locally developed lab manual.

Open Educational Resources

• Shook, B., Braff, L., Nelson, K., & Aguilera, K. (Eds.). (2021). Explorations Biological Anthropology Lab and Activities Manual. 1st ed.: LibreTexts / American Anthropological Association. CC BY NC (OER).

• We have access to a free online lab manual created by colleagues at Consumnes River College that can be provided free to charge to students online, or at cost printed in the bookstore. It is not technically OER since not all attributions have been listed but it is ultimately free to students and fair use.

Class Size Information

Class Size

32

Class Size Category

G - Large lab 32

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

The DEI that will primarily infused into this course is the subject of biological variation in modern humans, emphasizing that we are one species, and the majority of the activities in this lab class will be associated with these ideas. Additionally, this class has as other key components of the content discussion of the difference between gender and sex, along with discussion of the biological inapplicability of the concept of race, thereby forcing us to recognize that racial distinctions must be cultural and learned. The greater context for the broader discussion of race will be covered in the lecture class, although we do definitely touch on the subject in this lab course. Care will be taken to also incorporate more studies and research written by individuals who are typically underrepresented in the Anthropological literature.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

Because this course is a lab course, most of the assignments incorporate a significant amount of hands-on activities, which will allow learners who relate more to kinesthetic learning to be reached. The lab assignment and activities also directly relate to the lecture material allowing other types of learners to connect with the material as well. The activities are designed to contextualized often terribly esoteric concepts (such as taxonomies or inheritance) into more tangible products (such as groups of buttons or beads) that will help to make these ideas more real to students. Additionally, by focusing on the evolution of our species, showing students the skeletons and features associated with our biology, students will be able to grasp the concept that we are one species, recently descended from a recent African ancestor which helps to grow the realization that we truly are one.

Interactions

Explain how the course will incorporate student-to-student interaction.

Students will engage in student-to-student interaction by working with their lab partner(s) on the weekly activities in class. If the class is online then the instructor can create online Discussion Boards within the CMS where the students can discuss the different concepts or work on activities together. Finally, the use of google docs (such as Slide presentations or text documents) can allow for students to work cooperatively on activities such as identifying key features of different primate species or fossil hominins.

Explain how the course will incorporate instructor-to-student interaction.

Instructor-to-student interaction will be achieved through the use of short lectures at the beginning of the class session (to help students work Punnett squares or measuring of long bones for intramembral index calculations), either in person, mediated via video-conference software (if synchronous online) or through the use of online lectures (Video, audio or text lectures). Additionally, the presence of the instructor in large group discussions either face to face or through the use of the CMS Discussion boards will incorporate instructor-to-student interaction. Instructor-to-student interaction will also be achieved through the syllabus and the CMS by describing the structure of the class and sharing of background information about the instructor. Feedback on assignments and exams will also incorporate instructor-to-student interaction. Finally, the instructor will be present in the lab class (face to face) and will be walking around helping students identify key features or work through the assigned activity.

Explain how the course will incorporate student-to-content interaction.

Student-to-content interaction will be achieved through the assigned activities in class as well as other assignments- such as students working in groups on building sample taxonomies and blood typing exercises. Larger assignments such as the primate observation project will also allow for in depth interaction with the content.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Student-to-self interaction will be achieved through the use of in-class and online activities and discussions (for both face to face and online (both synchronous and asynchronous) where students will be expected to write their thoughts first before sharing them in both small group and large group discussions. Many of the activities ask for the students to consider why certain features are important evolutionarily or how they relate to other ideas. By exploring these questions on the worksheets the students are getting a stronger understanding of the key features of the units (genetics and evolutionary theory, skeletal anatomy, primate anatomy and behavior, and hominin fossil evolution) and are able to engage with the material at a deeper level.

Key: 155