

# ANTH R101: BIOLOGICAL ANTHROPOLOGY

**Originator**  
amelidonis

**College**

Oxnard College

**Discipline (CB01A)**

ANTH - Anthropology

**Course Number (CB01B)**

R101

**Course Title (CB02)**

Biological Anthropology

**Banner/Short Title**

Biological Anthropology

**Credit Type**

Credit

**Start Term**

Fall 2021

**Catalog Course Description**

This course introduces students to the study of human evolution including the concepts, methods of inquiry, and scientific explanations for biological evolution and their application to the human species. Issues and topics will include, but are not limited to, genetics, evolutionary theory, human variation and biocultural adaptations, comparative primate anatomy and behavior, and the fossil evidence for human evolution. The scientific method serves as foundation of the course. Credit will not be awarded for both the honors and regular versions of a course. Credit will be awarded only for the first course completed with a grade of "C" or "P" or better.

**Taxonomy of Programs (TOP) Code (CB03)**

2202.00 - Anthropology

**Course Credit Status (CB04)**

D (Credit - Degree Applicable)

**Course Transfer Status (CB05) (select one only)**

A (Transferable to both UC and CSU)

**Course Basic Skills Status (CB08)**

N - The Course is Not a Basic Skills Course

**SAM Priority Code (CB09)**

E - Non-Occupational

**Course Cooperative Work Experience Education Status (CB10)**

N - Is Not Part of a Cooperative Work Experience Education Program

**Course Classification Status (CB11)**

Y - Credit Course

**Educational Assistance Class Instruction (Approved Special Class) (CB13)**

N - The Course is Not an Approved Special Class

**Course Prior to Transfer Level (CB21)**

Y - Not Applicable

**Course Noncredit Category (CB22)**

Y - Credit Course

**Funding Agency Category (CB23)**

Y - Not Applicable (Funding Not Used)

**Course Program Status (CB24)**

1 - Program Applicable

**General Education Status (CB25)**

Y - Not Applicable

**Support Course Status (CB26)**

N - Course is not a support course

**Field trips**

May be required

**Grading method**

Letter Graded

**Does this course require an instructional materials fee?**

No

**Repeatable for Credit**

No

**Is this course part of a family?**

No

**Units and Hours**

**Carnegie Unit Override**

No

**In-Class**

**Lecture**

**Minimum Contact/In-Class Lecture Hours**

52.5

**Maximum Contact/In-Class Lecture Hours**

52.5

**Activity**

**Laboratory**

**Total in-Class**

**Total in-Class**

**Total Minimum Contact/In-Class Hours**

52.5

**Total Maximum Contact/In-Class Hours**

52.5

**Outside-of-Class**

**Internship/Cooperative Work Experience**

**Paid**

**Unpaid**

**Total Outside-of-Class**

**Total Outside-of-Class**

**Minimum Outside-of-Class Hours**

105

**Maximum Outside-of-Class Hours**

105

**Total Student Learning**

**Total Student Learning**

**Total Minimum Student Learning Hours**

157.5

**Total Maximum Student Learning Hours**

157.5

**Minimum Units (CB07)**

3

**Maximum Units (CB06)**

3

**Student Learning Outcomes (CSLOs)**

**Upon satisfactory completion of the course, students will be able to:**

- |    |  |
|----|--|
| 1  | Students will understand the importance of evolutionary theory, pre and post Darwin, genetics and heredity.  |
| 2  | Student will be able to draw independent conclusions and use molecular, fossil, climate and other data to explain primate origins, human origins, human diversity and adaptability.  |
| 3  | Students will read, comprehend and interpret various types of published ideas.   |
| 4  | Student will understand and use taxonomic principles to classify primates, particularly members of the genus Australopithecus and the genus Homo, and be able to make biologic and behavioral comparisons between Homo sapiens and other primates.   |
| 5  | Student will understand and communicate some of the complex inter-relationships between Homo sapiens and the planet on which they dwell, including how they learned to make tools, develop language and technology.  |
| 6  | Student will develop and improve information retrieval and management skills, particularly the use of online resources. Assessment: Objective test questions, diagramming, pop quizzes, observation of online behavior, in class discussion, online discussion homework.   |
| 7  | Students will apply logic, critical thinking, quantitative and qualitative reasoning to anthropological data and be able to distinguish amongst scientific laws, principles, hypotheses and theories.  |
| 8  | Students will master concepts and methods central to the anthropological perspective, e.g. culture, human evolution, genetics, linguistics, archaeology, prehistory, diversity, physical type, language, gender/sex, cultural relativism, holism, social structure, historical and cross-cultural comparisons, kinship, participant-observation and globalism. |
| 9  | Students will be able to identify major figures in the history of anthropology, the major schools/orientation of anthropological theory, and important trends in contemporary anthropological theory, methods and ethics   |
| 10 | Students will improve information retrieval and organizational skills necessary to the current practice of anthropology, including the use of online and library resources.  |
| 11 | Students will apply their knowledge to the solution of human problems, both local and global, in both theoretical and practical settings, including a more mature understanding of their own place in society, in the workplace, and in academia   |
| 12 | Students will use data, including genetic information and fossils to explain the process of human evolution and our migration throughout the globe, and communicate anthropological perspectives on ancestry and race  |

**Course Objectives**

Upon satisfactory completion of the course, students will be able to:

- |    |  |
|----|--|
| 1  | Describe the scientific process as a methodology for understanding the natural world.  |
| 2  | Define the scope of anthropology and discuss the role of biological anthropology within the discipline.  |
| 3  | Identify the main contributors to the development of evolutionary theory.  |
| 4  | Give examples of genetic illnesses and the mechanisms by which they are transmitted.   |
| 5  | Explain the basic principles of Mendelian, molecular and population genetics.  |
| 6  | Evaluate how the forces of evolution produce genetic and phenotypic change over time.  |
| 7  | Summarize the major events in human evolution and prehistory.  |
| 8  | Demonstrate an understanding of classification, morphology and behavior of living primates.  |
| 9  | Summarize methods used in interpreting the fossil record, including dating techniques.   |
| 10 | Recognize the major groups of hominin fossils and describe alternate phylogenies for human evolution.  |
| 11 | Identify the biological and cultural factors responsible for human variation.  |
| 12 | Summarize the major migrations out of the African homeland, into Asia, Europe, Australia, North and South America, and into the Pacific Islands. |

**Course Content****Lecture/Course Content**

1. The Nature of Scientific Inquiry and the Scientific Method
  - a. Theories and hypotheses
  - b. Empiricism and rationality
  - c. Laws and principles
2. Perspectives of Biological Anthropology
  - a. The history of anthropology
  - b. Paleontology, archaeology, molecular anthropology as related disciplines.
  - c. The terms hominid/hominine: the rise of bipedal primates.
  - d. Evolution as distinct from speciation.
3. History and development of biological evolutionary thought
  - a. Classical views
  - b. Linnaeus and taxonomy
  - c. Darwin, Malthus, Cuvier, Lamarck and other early thinkers
  - d. Watson and Crick
  - e. Hardy and Weinberg
4. Basics of Human Molecular Genetics
  - a. Introduction to cells and their evolution.
  - b. Somatic cells vs. sex cells.
  - c. The human chromosome, the structures of DNA, RNA & mitochondrial DNA.
  - d. The role of mutations, random assortment and cross-over effects in constituting a genome.
  - e. Cellular metabolism and diversification of cell types over time.
5. Mendelian and Population Genetics
  - a. Gene pools, local breeding population, selective pressures, gene drift and gene flow.
  - b. Adaptive radiation and founder effect.
  - c. Hardy-Weinberg's Equilibrium Equation.
  - d. Macroevolution vs. microevolution.
  - e. Exogamy and endogamy.
  - f. Genetic markers and illnesses in particular populations.
6. Mechanisms of Evolution
  - a. Processes and scale of evolution; adaptations and mutations
  - b. Rise of life, invertebrates and vertebrates, the role of climate change.
  - c. Evolution of fish, amphibians, reptiles, birds, mammals and primates.
7. Comparative primate taxonomy, anatomy and behavior
  - a. Characteristics of primates.
  - b. Early primates vs. hominoids, the rise of the apes.

- c. Pongids vs. hominids.
  - d. Pongid behavior.
8. The nature of the fossil record and dating techniques
- a. How fossils are made and discovered
  - b. Stratigraphic and radiographic dating techniques
  - c. Other dating techniques
9. Fossil and genetic evidence of human evolution
- a. Early Hominines
    - i. Pre-Australopiths.
    - ii. Australopithecines and the story of Lucy.
    - iii. Climate variables in the rise of the hominids.
    - iv. The importance and function of bipedalism.
    - v. Comparative anatomy of bipedalism and other forms of locomotion.
  - b. The Rise of the Genus Homo
    - i. Increases in brain size, brain morphology and function.
    - ii. Behavioral traits of fossil members of the genus.
    - iii. Homo habilis, its adaptive radiation, capacities and descendants, the Olduvai toolkit.
    - iv. Homo ergaster, its adaptive radiation, its brain capacities, and the longlasting nature of the Acheulian toolkit.
    - v. Homo antecessor and other archaic members of the genus
    - vi. Homo neanderthalensis
  - c. Mitochondrial DNA and the Y Chromosome: What do they tell us?
  - d. Archaic Homo sapiens
    - i. The shared Mousterian toolkit, the replacement of the Acheulian.
    - ii. Archaic humans in Africa and Asia.
    - iii. Hafted tools, making fire, encounters with Neanderthal.
    - iv. Settlement of the Levant.
  - e. Fully Modern Homo sapiens
    - i. Characteristics and definition, radiation out of Africa.
    - ii. The arrival of FMHS in Europe, the replacement of the Neanderthals.
    - iii. The genes that make us human, expressive culture and its role in anthropogenesis.
10. Biocultural adaptations and modern human variation
- a. Flint mines, early extra-somatic symbolic systems, the evolution of Proto-World.
  - b. Comparison of Neanderthal and Sapiens: linguistic and tool making traditions.
  - c. What is an instinct? Does H. sapiens have them? The human relationship to fire.
  - d. Language, reasoning, cognition and the evolution of the brain.
  - e. Sexual selection, estrus vs. menses, the biology of sexuality and gender.
  - f. Habitats and Practices in the Rise of Homo sapiens.
  - g. Technology and Climate
    - i. Major climate changes, early human knowledge of climate, geology and geography.
    - ii. Adaptations to latitude and altitude.
    - iii. Ice ages, continental drift, boating routes and over-water migration.
    - iv. Hypotheses on small changes: hair, height, nose shape and immunity.
  - h. The origin of art.
11. Future Directions of Biological Anthropology.
- a. New technologies and techniques.
  - b. Impact of evolutionary science on history and society.
  - c. Theoretical disagreements and possible resolutions.

**Laboratory or Activity Content**

None

**Methods of Evaluation**

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Essay exams

Essays  
Objective exams  
Problem-Solving Assignments  
Quizzes  
Research papers

## **Instructional Methodology**

### **Specify the methods of instruction that may be employed in this course**

Audio-visual presentations  
Computer-aided presentations  
Collaborative group work  
Class activities  
Class discussions  
Case studies  
Distance Education  
Demonstrations  
Field trips  
Group discussions  
Guest speakers  
Instructor-guided interpretation and analysis  
Instructor-guided use of technology  
Lecture  
Small group activities

### **Describe specific examples of the methods the instructor will use:**

1. The instructor will lead discussions on topics that may include the scientific method, DNA, osteology, genetics, primates, paleoanthropology, adaptation, variation, evolution and the fossil record.
2. The instructor will utilize lectures, films, internet materials, skeletal remains, models and computer software to explore and critically analyze topics relevant to the understanding and application of biological anthropology.
3. Students will be asked to critically analyze a variety of evidence and utilize it to develop theories regarding human origins, genetics, evolution, and heredity.

## **Representative Course Assignments**

### **Writing Assignments**

1. Summaries of research in texts, journals and webpages.
2. Essays demonstrating knowledge of facts and concepts presented in class.
3. Paragraphs written to support diagrams that show linear and multilinear processes.
4. Tell-all-you know assignments regarding particular topics of key importance.
5. Organized presentations of information synthesized from readings, lectures and videos.
6. Timelines, created in various forms, including tables and in essay form.

### **Critical Thinking Assignments**

1. Participate in class, online and small group discussions regarding the importance of genetic evidence in understanding taxonomic classifications related to primates.
2. Students will complete short writing assignments evaluating fossil and osteological evidence determining key characteristics including genus and species, age, sex, key traits such as bipedalism, brain size, stature.

### **Reading Assignments**

1. One or two chapters per week from the textbook and other relevant sources.

## **Outside Assignments**

### **Representative Outside Assignments**

1. Internet based assignments, such as visits to the French National Online Museum of Lascaux.
2. Participating in online discussions related to the course materials for that particular week. Topics may include: the difference between science, religion and pseudoscience, why studying genetics is important to human society, what heredity teaches us about human evolution, primate models for the evolution of human behavior, methods of paleoanthropology, what it means to be human, how scientific knowledge can shape public policy, how infectious disease can be understood from an evolutionary perspective, human variation from scientific and pseudo scientific perspectives.

3. Students will complete short writing assignments evaluating fossil and osteological evidence determining key characteristics including genus and species, age, sex, key traits such as bipedalism, brain size, stature.

## Articulation

### Comparable Courses within the VCCCD

ANTH M01H - Honors: Biological Anthropology  
 ANTH R101H - Honors: Biological Anthropology

## District General Education

### A. Natural Sciences

### B. Social and Behavioral Sciences

### C. Humanities

### D. Language and Rationality

### E. Health and Physical Education/Kinesiology

### F. Ethnic Studies/Gender Studies

## CSU GE-Breadth

### Area A: English Language Communication and Critical Thinking

### Area B: Scientific Inquiry and Quantitative Reasoning

### Area C: Arts and Humanities

### Area D: Social Sciences

### Area E: Lifelong Learning and Self-Development

### Area F: Ethnic Studies

## CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

## IGETC

### Area 1: English Communication

### Area 2A: Mathematical Concepts & Quantitative Reasoning

### Area 3: Arts and Humanities

### Area 4: Social and Behavioral Sciences

### Area 5: Physical and Biological Sciences

### Area 6: Languages Other than English (LOTE)

## Textbooks and Lab Manuals

### Resource Type

Textbook

### Description

Jurmain et al (2017). *Introduction to Physical Anthropology* (15th). Independence Wadsworth. 1285061977

**Resource Type**

Textbook

**Description**Larsen, C.S. (2019). *Our Origins: Discovering Physical Anthropology* (5th). New York Norton. 0393921433**Distance Education Addendum****Definitions****Distance Education Modalities**

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

**Faculty Certifications**

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

**Regular Effective/Substantive Contact****Hybrid (1%–50% online) Modality:**

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Students will post a discussion board topic such as the importance of understanding genetics in shaping public policy
E-mail	Faculty will communicate with students via email regarding course information and concerns.
Other DE (e.g., recorded lectures)	Faculty may record video lectures on the course content including videos on evolution, genetics, heredity, primates, paleoanthropology, variation, adaptation, and human health.
Video Conferencing	Faculty may utilize online live meetings with students to deliver lectures and have discussions on topics related to the course content.

**Hybrid (51%–99% online) Modality:**

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Students will post a discussion board topic such as the importance of understanding genetics in shaping public policy
E-mail	Faculty will communicate with students via email regarding course information and concerns.
Other DE (e.g., recorded lectures)	Faculty may record video lectures on the course content including videos on evolution, genetics, heredity, primates, paleoanthropology, variation, adaptation, and human health.
Video Conferencing	Faculty may utilize online live meetings with students to deliver lectures and have discussions on topics related to the course content.



**100% online Modality:**

<b>Method of Instruction</b>	<b>Document typical activities or assignments for each method of instruction</b>
Asynchronous Dialog (e.g., discussion board)	Students will post a discussion board topic such as the importance of understanding genetics in shaping public policy
E-mail	Faculty will communicate with students via email regarding course information and concerns.
Other DE (e.g., recorded lectures)	Faculty may record video lectures on the course content including videos on evolution, genetics, heredity, primates, paleoanthropology, variation, adaptation, and human health.
Video Conferencing	Faculty may utilize online live meetings with students to deliver lectures and have discussions on topics related to the course content.

**Examinations**

**Hybrid (1%–50% online) Modality**

- Online
- On campus

**Hybrid (51%–99% online) Modality**

- Online
- On campus

**Primary Minimum Qualification**

ANTHROPOLOGY

**Review and Approval Dates**

**Department Chair**

08/21/2020

**Dean**

08/24/2020

**Technical Review**

09/09/2020

**Curriculum Committee**

09/09/2020

**DTRW-I**

MM/DD/YYYY

**Curriculum Committee**

11/25/2020

**Board**

MM/DD/YYYY

**CCCCO**

MM/DD/YYYY

**Control Number**

CCC000180826

**DOE/accreditation approval date**

MM/DD/YYYY