COURSE SYLLABUS
Revised August 16, 2016

INSTRUCTOR INFO: Santiago Andres Garcia, M.A. / E-mail: sgarcia@cerritos.edu / Office Hours: Friday’s 9:30am to 10:30am in CTX LC201 / Skype ID: avian_serpent / URL: www.santiagoandregarcia.com

COURSE DESCRIPTION (1.0 UNIT) Anthropology 115L: Physical Anthropology Laboratory (CRN-22284) at Cerritos College, designed to complement the lecture course, is for students interested in expanding their knowledge of physical anthropology. Students will be introduced to the methods, techniques, and procedures used in physical anthropology research, gaining practical experience by participating in laboratory activities and experiments employing the scientific method. Laboratory exercises will include an assessment of the forces that affect evolutionary change, the observation of primate behavior, the assessment of human variation, and the identification and classification of the skeletal features of humans, non-human primates, and human ancestors. Also included will be an exploration of Mendelian, molecular, and population genetics.

STUDENT LEARNING OUTCOMES The goal of this class is to give students a comprehensive view of the evolution of the human species through the overview of theory, the completion of lab exercises, and the examination of fossil replicas. By the end of this course, students that have attended regularly shall be able to (1) explain the evolution of the human species, and the effects of the natural environment on human diversity, (2) identify the structural components of the body, i.e., the skeletal system, and (3) explain the importance of cells, and the genetic information they carry (DNA).

TEST MAKE-UP POLICY AND SYLLABUS LAW None of the tests may be taken after the scheduled date. In the case of an absence, a student should turn in the one extra credit assignment allowed, to make up for the missing quiz points. In the case of the final teaching practicum, only students who miss the last day due to documented illness, car accident, or death in the family, will be allowed to make up this last assignment. Regarding the syllabus, I have the academic freedom to alter the lesson plan at any time to accommodate unforeseen class dynamics.

STUDENT LOGIN To view the syllabus online and download any required class readings visit the following website http://www.santiagoandregarcia.com and click on the "Rio Hondo/Cerritos Student Page” link. In addition, the chapter readings from the lab book must be completed weekly, on your own, before the pertinent lab.

ATTENDANCE & LAB PARTICIPATION In order to comprehend the course topics students must attend EVERY class meeting and participate in all classroom discussions, activities, and exercises. Throughout the class period, I evaluate lab exercises for thoroughness. To receive credit for labs you must be present every Friday. I do not except late lab work. Exercises are worth 20 points each! See the course grading scale and point’s breakdown.


CHEATING, PLAGIARISM, & SEXUAL HARASSMENT See Cerritos College catalog.

COURSE SCHEDULE AND TOPICS

WEEK 1 - 08/19/2016 Friday (Prior to class read pages 1 through 5)
Chapter 1 Physical Anthropology as a Science
11:00 am – 11:15 am: Syllabus, book requirement, and classroom etiquette
11:15 am – 11:30 am: Classroom introductions
11:30 am – 12:00 pm: Introduction to Anthropology
12:00 pm – 12:15 pm: Introduction to Physical Anthropology
12:15 pm – 12:30 pm: Lecture on Anthropology as a science
12:30 pm – 01:50 pm: Complete Walker-Pacheco Self-Test 1.1, and “One Step Further” (p. 11-15).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Describe the steps of the Scientific Method, 2) Explain what is evolution, and 3) Describe what are the major forces of evolution. MATERIALS NEEDED: Rulers/and or calipers, graph paper, measurable plant parts or bean pods.
WEEK 2 - 08/26/2016 Friday (Prior to class read pages 17 through 24)

Chapter 2 The Organism and the Cell
11:00 am – 11:30 am: The basic body plan (cells, tissues, and organs)
11:30 am – 12:00 pm: Major components of a cell
12:00 pm – 12:15 pm: Classes of cells
12:15 pm – 12:30 pm: Introduction to chromosomes
12:30 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 2.1 (p. 25-27), Self-Test 2.1 (p. 29-30), and “One Step Further”/Additional Self-Test Questions (p. 33-34).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Identify all parts of the human eukaryotic cell, and 2) Describe what is chromosomes and why they are important. MATERIALS NEEDED: Scissors, glue, or tape.

WEEK 3 - 09/02/2016 Friday (Prior to class read pages 35 through 38, and 47 through 52)

Chapter 3 The Double Helix and DNA
11:00 am – 11:15 am: *Bones of the day: The Skull
11:15 am – 11:30 am: DNA defined
11:30 am – 11:45 am: DNA structure
11:45 am – 12:00 pm: DNA function
12:00 pm – 12:30 pm: Protein Synthesis and the replication of cells
12:30 pm – 01:50 pm: Complete Walker-Pacheco Self-Test 3.1 (p. 39-40), Self-Test 3.2 (p. 45-46), and Lab Exercise 3.2 (p. 53-54).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Identify all parts of the human DNA molecule, and 2) Describe what occurs during protein synthesis in the nucleus and cytoplasm of the cell. MATERIALS NEEDED: Drawing the DNA molecule Handout. Human skull cast.

WEEK 4 - 09/09/2016 Friday (Prior to class read pages 65 through 71)

11:00 am – 11:15 am: *Test 1 on Chapter’s 1, 2, and 3
11:15 am – 11:30 am: *Bones of the day: The Axial Skeleton

Chapter 4 How Cells are Made?
11:30 am – 12:00 pm: Cell division (mitosis and meiosis)
12:00 pm – 12:30 pm: Chromosome aberration/mutation
12:30 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 4.1 (p. 73-76), Self-Test 4.1 (p. 77-78), and “One Step Further”/Additional Self-Test Questions (p. 81-82).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Identify the two classes of human cells, including there function, and 2) Describe what occurs during mitosis and meiosis. MATERIALS NEEDED: Scissors to cut out chromosomes and tape to secure them on paper. Articulated human skeleton cast.

WEEK 5 - 09/16/2016 Friday (Prior to class read pages 83 through 84, 93, 97 through 99)

Chapter 5 Inheritance
11:00 am – 11:15 am: *Bones of the day: The Appendicular Skeleton
11:15 am – 11:30 am: Gregor Mendel
11:30 am – 12:00 pm: Autosomal traits
12:00 pm – 12:30 pm: Transmission of traits and the Punnett Square
12:30 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 5.1 (Only complete pages 89-90)
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Understand the relationship between Mendel’s laws, genetics, and gamete production, and 2) Explain the concept of probability and its role in the transmission of certain traits. MATERIALS NEEDED: PTC (phenylthiocarbamide) taste papers. Articulated human skeleton cast.

WEEK 6 - 09/23/2016 Friday (Prior to class read pages 113 through 116)

Chapter 6 The Major Forces of Evolution
11:00 am – 11:15 am: *Bones of the day: The Skull: A Closer Look
11:15 am – 11:45 am: The major forces of evolution and Natural Selection
11:45 am – 12:00 pm: Migration (gene flow)
12:00 pm – 12:30 pm: Genetic drift and mutation
12:30 pm – 01:50 pm: Complete Walker-Pacheco Self-Test 6.1 (numbers 2-6), and “One Step Further”/Additional Self-Test Questions (p. 133).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Describe the four major forces of evolution. MATERIALS NEEDED: Articulated human skeleton cast and all available human skull cast.
Chapter 7 The Bones Within Us

**LAB OBJECTIVES**: Be able to: 1) Describe the functions of the human skeleton, 2) Know the four types of bone classifications and their corresponding bones, and 3) Learn the bones and features of the human skeleton. **MATERIALS NEEDED**: Articulated human skeleton cast and all available disarticulated skeletons.

**WEEK 8 - 10/07/2016 Friday** (Prior to class read pages 151 through 155, 161)

Chapter 7 The Bones Within Us Cont.

**LAB OBJECTIVES**: Be able to: 1) Describe the functions of the human skeleton, 2) Know the four types of bone classifications and their corresponding bones, and 3) Learn the bones and features of the human skeleton. **MATERIALS NEEDED**: Articulated human skeleton cast, all available human skull cast, and all available disarticulated skeletons.

**WEEK 9 - 10/14/2016 Friday** (Prior to class read pages 181 through 182, 189, 195, and 203 through 205)

Chapter 8 Forensic Anthropology

**LAB OBJECTIVES**: Be able to: 1) Understand the range of information that can be obtained from a skeleton, 2) Use anthropomorphic techniques and gain experience in data collection, and 3) Use with ease sliding and spreading calipers. **MATERIALS NEEDED**: Articulated human skeleton cast, all available disarticulated skeletons, sliding, and spreading calipers.

**WEEK 10 - 10/21/2016 Friday** (Prior to class read pages 217 through 218, 225)

Chapter 9 Comparative Osteology and Functional Complexes

**LAB OBJECTIVES**: Be able to: 1) Understand the range of information that can be obtained from a skeleton, 2) Use anthropomorphic techniques and gain experience in data collection, 3) Use with ease sliding and spreading calipers, and 4) interpret postcranial skeleton and locomotive behavior. **MATERIALS NEEDED**: Articulated human skeleton cast, all available disarticulated skeletons, at least three varied hominin skull cast, sliding and spreading calipers.
WEEK 11 - 10/28/2016 Friday (Prior to class read pages 235 through 239)

Chapter 10 Biological Classification and the Living Primates
11:00 am – 11:15 am: Establishing evolutionary relationships and our shared ancestry
11:15 am – 11:30 am: Biological classifications
11:30 am – 11:45 am: Distribution, habitat, and diet
11:45 am – 12:00 pm: Primate Classification
12:00 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 10.1 – 10.3 (p. 237; 243; 249-250).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Describe the basis for biological classification, 2) Understand the concept of homology and its use in classification, 3) Describe the characteristics of the primate order, and 4) Identify the difference between primates and non-primates.

MATERIALS NEEDED: Articulated human skeleton cast, lemur cast, tarsier cast, at least three New World monkey skull casts, and at least three Old World monkey skull casts.

WEEK 12 - 11/04/2016 Friday (Prior to Zoo visit read pages 259 through 260, 263, 267)

Chapter 11 Observing Living Primates
9:00am to 2:00pm @ the Los Angeles Zoo*
Complete Walker-Pacheco Lab Exercise on observing living primates (choose three primates), or download and use the Chapter 11 Laboratory: Observing Living Primates Worksheet found on my website.

*Students have the option of choosing between the Los Angeles Zoo and the Orange County Zoo. Instructor will be present only at the Los Angeles Zoo on 11/04/2016 from 09:00am to 02:00pm. Students MUST staple their zoo ticket or receipt on their lab exercise, as proof that they attended either zoo. ARRIVE EARLY! The primates are most active in the early morning… Pack a lunch, carpool, and have your phones fully charged. Also, if we show up as a group of 15 we can pay the group rate of $15.00 each. Regular entrance fee is $17.00. I highly recommend we attend as a group; it makes for a greater learning experience.

LAB OBJECTIVES: Be able to: 1) Identify major groups of living (extant) primates on the basis of their physical features, 2) Utilize the main techniques of data collection in primate behavior, 3) Identify specific-species behavior, and 4) Grasp which methods are more suitable for different types of studies or for different species. MATERIALS NEEDED: Primate observation worksheets and captive primate facility. Provided by the instructor.

WEEK 13 - 11/11/2016 Friday Veterans Day NO LAB-CLASS MEETING!

WEEK 14 - 11/18/2016 Friday (Prior to class read pages 279 through 283)

Chapter 12 Early Primates from the Paleocene through the Miocene
11:00 am – 11:15 am: The Cenozoic Era (66 mya to present)
11:15 am – 11:30 am: Primate Beginnings of the Paleocene Epoch (66 to 56 mya)
11:30 am – 11:45 am: The “true” primates of the Eocene Epoch (56 to 34 mya)
11:45 am – 12:00 pm: The Oligocene Primates (34 to 23 mya)
12:00 pm – 12:15 pm: The Miocene Hominoids (23 to 52 mya)
12:15 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 12.1 (p. 287-293) and Self-Test 12.1 (p. 295-296).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) List and describe the major groups of the extinct primate species, 2) Recognize extinct species by identifying fossil casts, and 3) Explain the distribution of extinct primates in time and space. MATERIALS NEEDED: As many cast of the following primates: aegyptopithecus, proconsul, sivapithecus, lemur, tarsier, Old World monkey, New World monkey, chimpanzee, orangutan, and gorilla.

WEEK 15 - 11/25/2016 Friday Holiday Vacation NO LAB-CLASS MEETING!

WEEK 16 - 12/02/2016 Friday (Prior to class read pages 303 through 304, 309 through 310, 315)

11:00 am – 11:40 am: Video - ASU’s Becoming Human, and Test 4 on Chapters 9, 10, 11, and 12

Chapter 13 Who’s in Our Family?
11:40 am – 11:50 am: Bipedalism: the hallmark of humanity
11:50 am – 12:00 pm: Ape-human anatomical comparisons
12:00 pm – 12:15 pm: Cranial and dental differences between humans and apes
12:15 pm – 12:30 pm: Early members of the human line
12:30 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 13.1 – 13.3 (p. 307-322), and Self-Test 13.1 (p. 323-324).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.

LAB OBJECTIVES: Be able to: 1) Describe the mechanics of bipedalism, 2) Describe locomotor behavior from skeletal features of apes, modern humans, and extinct hominids, 3) Identify early members of the human family through fossil casts, and 4) Address the “gaps” in evolutionary relationships among members of the human line. MATERIALS NEEDED: All early hominin casts (skulls and bones) available and articulated skeleton. Early Hominin handout (1 of 2), provided by the instructor.
WEEK 17 - 12/09/2016 Friday LAST DAY TO TURN-IN EXTRA CREDIT
(Prior to class read pages 331, 339 through 340)

Chapter 14 The Genus Homo

11:00 am – 11:15 am: Early Homo
11:15 am – 11:30 am: Special case of the Neanderthals
11:30 am – 12:00 pm: Modern humans and their dispersal (the Out of Africa Model VS. the Regional Continuity Model)
12:00 pm – 01:50 pm: Complete Walker-Pacheco Lab Exercise 14.1 (p. 335-338), Self-Test 14.1 (p. 347-348), and One Step Further/Additional Lab Exercise 14.1 (p. 349-351).
12:30 pm – 01:50 pm: Lab assistance by instructor through hands-on engagement with students and materials.
12:30 pm – 01:50 pm: Test 5 on Chapters 13 and 14.

LAB OBJECTIVES: Be able to: 1) Recognize extinct members of the genus homo by identifying fossil casts, 2) Recognize the distinct skeleton features of modern homo when compared to early homo lineages, 3) Describe extinct members of the genus homo in time and space, and 4) Articulate our human evolutionary history, main tenants, and future understandings. MATERIALS NEEDED: All hominin casts (skulls and bones), early and late, available and articulated skeleton. Hominin handout (2 of 2), provided by the instructor.

WEEK 18 - 12/16/2016 Friday

09:00 am – 12:00 pm: Final Teaching Practicum’s

IMPORTANT DATES FOR FALL 2016

EXTRA CREDIT 3-4 page, double-spaced, informative paper on the anatomical differences between apes and australopithecines, or any of the different species of the human line. A minimum of two must be written about in order to compare and contrast. 25 points possible, EXTRA CREDIT IS DUE ON, OR BY DECEMBER 9, 2016, NO LATER!
CLASSROOM ETIQUETTE

1. Engage your classmates through dialogue and intellectual conversations; though be respectful and mindful of people’s social identities, gender, age, and physical disabilities. As a general rule, do not swear or use profanity in any academic setting.

2. Please have all of your electronic devices turned off. It is also recommended that you keep your valuable (expensive) gadgets out of public view – theft does occur. Do not walk into class late with your headphones on and the music turned up; this is a major distraction for everyone. If late, walk in quietly, books in hand, and prepared to learn.

3. ABSOLUTELY NO TEXTING DURING CLASS, ON OR AFTER EXAMS. You will be asked to put your phones away during class if this behavior is observed. Please do this during breaks only.

4. When asking a question raise your hand. No shouting or talking out loud. Refer to the instructor as "Instructor Garcia," “Mr. Garcia,” “Professor Garcia," or "Profe;" is fine also.

5. When emailing ANY instructor, myself included, be professional and clear in your message. "Hey what's up professor?" will not get you a timely response. PLEASE DO NOT ask me to print out your homework, as the college does not pay me for ink. All work is to be turned-in during scheduled classes or please place in my department box in the Division and Behavioral Sciences offices before class and before due date.

6. For this class, laptops for taking notes will not be allowed. THEY ARE a distraction for everyone, including the instructor. As an alternative, lectures can be voice recorded.

7. Assert yourself politely in class. Greet your classmates with "Good morning, how are you?" Give yourself time throughout the day to eat healthy, complete homework, and prepare for class.

8. Practice good hygiene; remember that the classroom is a shared space of learning. Arriving to class under the influence of drugs or alcohol is prohibited; REMAIN home, for your own safety and the safety of others.

9. HOMEWORK POLICY: I do not accept late summaries/labs since these are scheduled and you are aware of their due date. Worksheets too are passed out only once on the scheduled day and are due during the next class meeting. In lieu of late work, all students may turn in one extra credit assignment that is to be announced.

What do you as a student receive in return? A passionate instructor knowledgeable in the disciplines of Mexican culture and history, Mexican-American history, and the four-fields of Anthropology. You will learn in my class, you will be challenged to think beyond the norm, and you will do so with new material. My goal is to aid your learning, teach you, bring out the best in you, and prepare you for what is a long but rewarding educational experience.
1. At no point shall we be working with hazardous materials, powered electronics, or mechanical equipment. Casual and comfortable dress is standard.

2. Please be mindful of all cast materials: the articulated human skeleton, the disarticulated human skeletons, the individual skulls, and individual bone pieces. Handle all materials with care and normal usage.

3. Please be mindful of all laboratory-measuring devices: the sliding calipers, the spreading calipers, osteometric boards, scales, rulers, etc. See 2.

4. When any of the materials become damaged, please report these to the lab Instructor immediately. The sooner you report a damaged learning tool the sooner we replace it.

5. The instructor will make all materials easily accessible to students and at no point will you be asked to partake in the storing of the material. Do not ever take materials outside of the lab. See the “MATERIALS NEEDED” for each particular teaching unit.

6. Certain laboratory exercise will require that you label the skeleton casts. In such scenarios proceed as instructed to do so. Never label the skulls by writing directly on them.

7. The instructor shall actively facilitate the course as follows: introductory lecture, overview of the lab exercises, lab assistance, and student work evaluation. Follow your syllabus!

8. Have fun and engage the material. Observe it, feel it, measure it, size it up, re-imagine it, and consider how many of the skeleton cast were modeled after real life remains. Lets be thankful for that.

THE ARTICULATED TEACHING HUMAN SKELETON

The articulated teaching human skeleton available to us in room SS 220 is for teaching and learning purposes only. The skeleton, which is locked daily in the storage room, shall be made available to students during every class meeting, and it shall be the teachers responsibility to have on display during all class meetings. When learning from the skeleton please abide by the following rules: 1) never pull or excessively twist the skeletons joints 2) never write on the skeleton but instead use a proper labeling mechanism, and 3) never remove the skeleton from the lab.
Final Teaching Practicum Instructions

The purpose of the teaching practicum, taking place on 12/16/2016 Friday is for students to present to the class an 8 to 10 presentation on a topic from the class (choose from your syllabus or book). The presentations can be in the form of a power point, lecture, or teaching demonstration using the skeleton and skull casts available in the classroom. The teaching practicum works out best in groups of two with the work equally divided between partners. However, you may decide to work alone.

Topics: Choose any topic from the syllabus discussed in class or any topic from the book that you felt did not receive a thorough explanation or that perhaps you want to know more about. The topics can range from physical anthropology to cultural anthropology.

Some topic ideas: The Skeletal system, the skeletal system and its relation to organs, plant cells vs. animal cells, Neandertal teeth vs. Modern Human teeth, Bipedal walking vs. Knuckle walking, Oldowan tools vs. Acheulean tools, what is evolution? What is DNA? The out of Africa Model, Australopithecus afarensis “Lucy” vs. Homo habilis, selected weapons used by Neandertal and Modern Human, weather patterns of the Pleistocene period, subsistence practices of the Genus Homo, the use of tools, etc.…

Tip: Do not go big, you do not have too. Pin point an area that you feel you can explain to us, describe to us, and teach us. Make students in the class and the instructor think/say “Ah good point,” “so that is how that works,” “I never really thought about it that way.” Comparing and contrasting is always good, use this method just I did in class. If you would like to pass out handouts during your presentation you may, just make sure you print enough for everyone.

Summary: A one-page summary regarding your presentation needs to be turned in. The summary should just be just that, a summary of your presentation outlining the key points that you made in class. Please make sure that both of your names are on the summary. The summary needs to be typed out…

Grading Rubric:

Time: 20
Clarity: 60
Contributory: 20

Total: 100

Make sure your presentation is 8 to 10 minutes long. Make sure you are clear in delivering. Practice your presentation at least two times. Make sure your presentation is contributory. In other words, teach us something!!! Even if we have already heard it, make us understand it further. You can do this!!!