

**St. Edward's University**

**OACS**

Syllabus

**ANTH 2301**

**PHYSICAL ANTHROPOLOGY**

**FALL 2017**

**(Online Section)**

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## **1. Overview**

**Course Description:** This course provides an overview of the field of Physical and Biological Anthropology. Essentially the course examines the entire field of human physical diversity. It also includes primate and earlier human ancestors. The purpose of the field is to learn how humans and primates evolve to adapt to new surrounding. It also helps by providing a foundation for how we can understand human's physical issues with adapting to our ever-changing world. It is a good foundation for cultural studies, medicine and for anyone who wants to learn more about ourselves.

**Contact:** Email is the official communication of the university. It is also the best way to reach me in this online section. My home is in a poor cell phone reception area but I always have my email with me. I will typically respond to email within 24 hours, but allow 48 hours before following up. If I need to be away for more than 48 hours, I will let the class know.

**Office Hours:** Because this is an online section, there will not be fixed office hours. I live five minutes from the St. Edward's University campus and can meet students on campus as needed. We can also set up telephone sessions as needed. Just let me know if we need to speak or meet in person.

## 2. Course Learning Objectives

As the course progresses, the student will:

- a. Describe the four fields of anthropology and define the place of physical anthropology within the discipline.
- b. Explain the biological basis of life represented by chromosomes, cell division, DNA, and RNA.
- c. Outline the principles of Mendelian inheritance.
- d. Discuss the principles of evolution.
- e. Describe characteristics shared by primates and describe the living nonhuman primates.
- f. Describe and analyze primate behavior.
- g. Evaluate primate models of human evolution.
- h. Outline the principles of taxonomic classification and outline the geologic time scale.
- i. Identify early primates and the Miocene hominoids.
- j. Discuss paleoanthropological research methods.
- k. Describe and analyze Plio-Pleistocene hominids.
- l. Organize and interpret the evidence from Plio-Pleistocene hominids.
- m. Identify the characteristics of *Homo erectus* and explain key problems in interpretation of the evidence.
- n. Analyze the evidence from Neanderthals and other archaic humans.
- o. Analyze the evidence from *Homo sapiens sapiens*, including technological changes during the Upper Paleolithic.
- p. Analyze genetic variation within human populations.
- q. Describe adaptation and acclimatization in human populations to environmental challenges.
- r. Discuss threats facing life on the planet.

### 3. Textbook and Other Course Materials

Jurmain, Robert, Lynn Kilgore, et al. (2014). Introduction to Physical Anthropology. 14th ed. Thomson.

There are chapter lectures in Blackboard. Although they do not replace the textbook, they are intended as a supplement.

Videos. Each student must view at least five videotapes and turn in rough viewing notes on them. A list of acceptable titles will be placed in the course site. Students are free to find their own documentaries/ movies to watch. Please email me any titles not on the list for approval. All films must address human evolution, primate evolution, or other suitable topic. The St. Edward's Library offers free streaming movies to students at:  
<http://stedwards.kanopystreaming.com/>

### 4. Course Organization

Each week we will focus on specific topics from the textbook and additional resources. I will post a discussion question on Sunday and students will post a response to the discussion question by the end of the day on Sunday. No late posts will be accepted.

Also on Sunday, I will post a weekly assignment in the announcements section. These will typically be short (200-500 word) informal essays on your reflections about topics presented, or other current issues in the field as directed. Since these are personal journal-style posts, MLA formatting is not required. They will be due by end of the day on Sunday.

It will be up to each student to pick a film to watch and post notes to a designated discussion forum. These notes must include a quick summation and critical evaluation (200-500 words) I will assist with recommendations that are available to stream free from the library website. You are free to use any other film you find related to the class site, but email me in advance so I can approve that it is on topic.

#### **Late Work Policy:**

- No late work will be accepted except under extreme mitigating circumstances such as hospitalization or a death in the family. This is only a 7-week online class

so the weekly workload is twice what it would be for a full-semester 3-hour course. The workload is moderate but it is always easy to get behind in online/ short semester courses so be sure to not procrastinate too much.

**Attendance Policy:** Attendance is a bit different in an online section. A lack of the required posting in a timely manner will constitute an attendance violation. The penalty will be the lowered grade for having missed the posts.

## 5. Grading

The grade distribution is:

- Posts to the discussion question and question and replies to other students (8 pts per week with original post and replies counting equally) **48%**
- Weekly written (journal) activities (7 pts per week) **42%**
- Film notes **10%**

## 6. Calendar

Week 1: Aug 28 – Sept 3

Week 2: Sept 4 – Sept 10 (Labor Day – 4<sup>th</sup>)

Week 3: Sept 11 – Sept 17

Week 4: Sept 18 – Sept 24

Week 5: Sept 25 – Oct 1

Week 6: Oct 2 – Oct 8

Week 7: Oct 9 – Oct 15 (Founder's Day – 13<sup>th</sup>)

## 7. Weekly Learning Objectives and Assignments

**Week 1: Overview of the course, introduction, syllabus and first assignments  
(Read: Jurmain Chapters 1-3) (Written Assignment 1 Due)**

## Learning Objectives:

### Chapter 1

1. Identify the significance of the Laetoli footprints.
2. Define hominid, bipedality, species, primate, culture, and ethnocentrism.
3. Define anthropology and identify its major subfields.
4. Identify major areas of research in physical anthropology.
5. Explain the biocultural approach to the study of human evolution.
6. Describe the anthropological perspective in the study of human beings.
7. Explain how to evaluate scientific theories.
8. Explain the scientific method and its application to natural selection.

### Chapter 2

1. Outline the history of the development of evolutionary thought.
2. Identify the contributions of Lamarck, Couvier, Lyell, Malthus, and Wallace.
3. Briefly summarize Darwin's development of his theory of evolution.
4. Explain the concept of natural selection, using the examples of Darwin's finches and the peppered moth.
5. Outline the mechanisms that operate in natural selection.
6. Evaluate the strengths and omissions in Darwin's theory.
7. Analyze the importance of genetic variation for evolution.
8. Describe and analyze opposition to evolutionary theory.

### Chapter 3

1. Describe types of cells and their structure and functions.
2. Describe the structure and functioning of DNA and RNA.
3. Outline DNA replication and protein synthesis.
4. Describe the characteristics of chromosomes.
5. Define and explain introns and exons.
6. Define genes and chromosomes and explain how mutations occur.
7. Identify types of genes.
8. Outline the processes of meiosis and mitosis.
9. Explain the evolutionary significance of meiosis.
10. Identify problems in meiosis.
11. Describe the Human Genome Project.

12. Explain stem cells, PCT, recombinant DNA research, and cloning.
13. Evaluate the controversy over stem cell research.

## **Week 2: Overview of Anthropology, Evolutionary Theory and Biology (Jurmain Chapters 4-5) (Written Assignment 2 Due)**

### Learning Objectives

#### Chapter 4

1. Explain the basic principles of Mendelian inheritance, including dominance, recessiveness, codominance, and the principles of segregation and independent assortment.
2. Describe some Mendelian characteristics in humans.
3. Analyze some of the complexities in the interactions of dominant and recessive alleles.
4. Outline pedigrees of autosomal dominant and autosomal recessive traits.
5. Describe the behavior and mechanisms of sex-linked traits.
6. Describe polygenic inheritance and cite some examples.
7. Compare and contrast Mendelian and polygenic inheritance.
8. Explain pleiotropy.
9. Identify mitochondrial DNA (mDNA) and its significance.
10. Explain what is meant by "the modern synthesis" and its concept of evolution.
11. List and explain factors that over time alter the genetic makeup of a population.
12. Analyze the operation of sickle-cell anemia.
13. Identify levels of organization in the evolutionary process.
14. Describe molecular applications in forensic anthropology.

#### Chapter 5

1. Explain principles of biological classification.
2. Describe cladistics and give examples of its use.
3. Identify various concepts of species.
4. Explain how fossil species and genera are identified and analyzed.
5. Outline vertebrate evolutionary history.

6. Outline the geological time scale and the concept of "deep time."
7. Explain the evolutionary significance of continental drift.
8. Explain processes of macroevolution.
9. Describe attempts to conserve primates and other tropical forest animals.

**Week 3: Genetics & Macroevolution**  
**(Jurmain Chapters 6-8) (Written Assignment 3 Due)**

Learning Objectives:

Chapter 6

1. Outline the characteristics of primates.
2. Explain the significance of the arboreal adaptation.
3. Describe primate teeth and what they tell us.
4. Describe primate locomotion.
5. Identify the geographical distribution of various types of primates.
6. Summarize the classification of primates.
7. Analyze DNA evidence for primate classification.
8. Describe each grade of primate.
9. Evaluate the survival problems facing primates and efforts to preserve them.

Chapter 7

1. Identify scientists who carried out pioneering primate field studies.
2. Explain the influence of the environment on social behavior and give examples.
3. Explain what is meant by behavioral ecology and give some examples.
4. Identify types of primate groups and factors that influence social structure.
5. Discuss the functions of sociality.
6. Describe primate social behavior, including dominance, communication, aggression, and affiliative behaviors.
7. Describe primate reproductive strategies.
8. Analyze sexual selection and explain the example of infanticide.
9. Discuss parenting among primates.
10. Discuss the ethics of the use of primates in biomedical research.

11. Assess the nature of evidence that can be used in citing primates as models for human ancestry.
12. Describe the range of body size in contemporary primates and its correlations with diet, locomotion, and brain size.
13. Describe primate facial expressions, displays, and call systems.
14. Describe primate communication, contrast it with language, and summarize the ape-language experiments.
15. Explain the evolution of language.
16. Describe primate cultural behavior and explain why the behavior is cultural.
17. Describe affiliative behaviors and intergroup aggression among some primates.
18. Explain what is meant by the primate continuum.
19. Describe molecular applications in the study of primates.

#### Chapter 8

1. Assess the significance of geological epochs.
2. Describe the primates of the Paleocene.
3. Describe early evidence for the evolution of lemurs and lorises
4. Describe the early anthropoids.
5. Describe the chief fossils of the Oligocene.
6. Explain the appearance of New World monkeys.
7. Describe the first undoubted hominoids.
8. Explain the significance of Gigantopithecus.

#### **Week 4: Primates**

#### **(Jurmain Chapters 9-10) (Written Assignment 4 Due)**

#### Learning Objectives:

#### Chapter 9

1. Define the term hominid and discuss biocultural evolution.
2. Describe the subdisciplines of plaeoanthropology.
3. Explain how a paleoanthropological expedition works a site.
4. Explain the significance of the Olduvai Gorge.
5. Summarize reinterpretation of Olduvai sites by Binford and others.
6. Compare chronometric and relative dating.

7. Explain how potassium-argon and C14 dating work.
8. Explain how to cross-check K/Ar dates.
9. Explain the concept of biostratigraphy.
10. Summarize the types of sites found at Olduvai.
11. Summarize what we know about the diets of the Olduvai hominids.
12. Give examples of experimental archaeology.
13. Explain how to reconstruct hominid environments and their implications.
14. Discuss why hominids became bipedal.
15. Explain the Piltdown hoax.

## Chapter 10

1. Describe early primates of the Eocene and Oligocene.
2. Describe *Apidium* and *Aegyptopithecus* and their significance.
3. Describe Miocene fossils and their characteristics.
4. Describe the advantages and morphological features of erect posture.
5. Identify changes in hominid hip anatomy.
6. Assess fossil evidence for bipedality.
7. Explain why so many fossils are found in the Great Rift Valley.
8. Identify important sites in East and Central Africa.
9. Describe *Ardipithecus* fossils and their environments.
10. Discuss the significance of the Laetoli footprints.
11. Identify the chief finds at Hadar.
12. Describe the features of *Australopithecus afarensis*, including locomotion.
13. Describe later Australopithecine finds.
14. Contrast *Australopithecus* and early *Homo* fossils.
15. Identify ER-1470.
16. Identify Raymond Dart and the Taung child.
17. Describe later Australopithecine finds in South Africa.
18. Contrast "gracile" and "robust" Australopithecines.
19. Describe some of the complexities of dating and interpreting South African fossil hominids.
20. Identify some of the taxonomic issues in early hominid fossil interpretation.
21. Describe subsets of these fossil materials.
22. Outline the adaptive patterns of fossil primates.
23. Evaluate possible phylogenetic trees.

**Week 5: Paleoanthropology & Early Hominins**  
**(Jurmain Chapters 11-13) (Written Assignment 5 Due)**

Learning Objectives:

Chapter 11

1. Identify and explain the probable date and reasons for the first hominid dispersal outside Africa.
2. Describe brain size, body size, cranial shape, and dentition of *Homo erectus*.
3. Describe African specimens and the Dimansi finds.
4. Describe *Homo erectus* discoveries in Java and near Beijing.
5. Describe the tools at these sites and what we know about the peoples' way of life.
6. Evaluate evidence that *Homo erectus* used and made fire.
7. Describe African *Homo erectus* discoveries.
8. Describe the Narikotome "boy."
9. Identify trends in *Homo erectus* technology, including Acheulian tools.
10. Discuss the remaining problems in the interpretation of *Homo erectus* fossils.
11. Compare and contrast the Man the Hunter and Woman the Gatherer hypotheses.

Chapter 12

1. Compare and contrast premodern and anatomically modern *Homo sapiens*.
2. Describe the Pleistocene and the main changes in humans' Pleistocene environments.
3. Describe premodern humans from Africa, Asia, India, and Europe.
4. Identify transitional fossils and their mosaic traits.
5. Describe the Levalloisian tool-making tradition.
6. Describe Acheulian tools.
7. Describe food and dwellings of the Middle Pleistocene.
8. Describe classic Neandertals and Neandertals from western and central Asia.
9. Describe the Mousterian tool tradition.

10. Describe Neandertal settlements, subsistence, symbolic behavior, and burials.
11. Assess genetic evidence for the evolutionary fate of Neandertals.
12. Contrast the cultures of Neandertals and modern *Homo sapiens*.
13. Evaluate evolutionary trends in the genus *Homo*, including brain size.
14. Describe studies of ancient mDNA.

### Chapter 13

1. Identify basic questions that need to be answered regarding the origin and dispersal of anatomically modern humans.
2. Compare, contrast, and evaluate the dominant hypotheses explaining the appearance of anatomically modern humans.
3. Assess mitochondrial DNA evidence (the "Eve Hypothesis")
4. Describe the earliest *Homo sapiens sapiens* finds from the Near East, Africa, Europe, Asia, and Australia.
5. Describe the morphological characteristics of *Homo sapiens sapiens*.
6. Describe major discoveries and fossil dates for early *Homo sapiens*.
7. Describe technology of the Upper Paleolithic in Europe and Africa, including the punch-blade technique and the first machines.
8. Describe the art of the Upper Paleolithic in Europe and Africa.
9. Describe trends in the Upper Paleolithic appearance of linguistic abilities.

## **Week 6: Human Evolution**

### **(Jurmain Chapters 14-17) (Written Assignment 6 Due)**

#### Learning Objectives:

### Chapter 14

1. Explain how concepts of race have changed in recent history.
2. Evaluate the concept of race.
3. Analyze race and intelligence.
4. Explain the concept of a population.
5. Describe and explain the human polymorphisms of ABO, Rh, other red cell antigens, white blood cells, and other polymorphisms.
6. Describe the Hardy-Weinberg theory of genetic equilibrium.
7. Discuss the effects of nonrandom mating in human populations.
8. Identify polymorphisms in DNA.

9. Analyze patterns of polymorphisms and “racial” categories.
10. Cite several examples of biocultural evolution.
11. Describe the polymorphisms associated with malaria.
12. Explain the distribution of lactose intolerance.
13. Describe molecular applications to population history.

### Chapter 15

1. Define stress, adaptation, and the three types of acclimatization.
2. Summarize links between ultraviolet radiation, vitamin D synthesis, and skin color.
3. Analyze the links of skin cancers to ultraviolet radiation.
4. Describe human responses to heat and cold and high altitude.
5. Discuss the role of infectious diseases in human populations, including HIV and AIDS.
6. Assess biocultural factors in the spread of diseases.
7. Evaluate the concept of racial purity.

### Chapter 16

1. Explain the evolution of the human life course.
2. Explain biocultural evolution and give some examples.
3. Explain and give examples of life history theory.
4. Describe how to study bone growth, stature, and brain growth.
5. Explain what is meant by sexual dimorphism.
6. Analyze the links between basic nutrients and growth.
7. Outline the evolution of nutritional needs.
8. Explain the “Paleolithic diet.”
9. Discuss the evolution of human reproduction.
10. Describe effects of undernutrition and malnutrition.
11. Weigh the effects of hormones, genetics, and environmental factors in human growth and development.
12. Assess how the human life cycle compares with other mammals, especially nonhuman primates.
13. Describe unusual aspects of adolescence and aging in humans.
14. Describe the implications of human population growth.
15. Discuss the impacts of human technology on the environment.\

## Chapter 17

1. Describe human impacts on the planet and other life forms, including global climate change, biodiversity, and the acceleration of evolutionary processes.
2. Discuss initiatives to combat these impacts.

### **Week 7: Wrap-up and contemporary issues (Written Assignment 7Due)**

## **8. Course Expectations**

**Student Conduct:** The student conduct policies of this class are based on simple, mutual respect that we should have for one another. Civil and productive discussions are essential in an online course. We do need to challenge each other and use more than just simple affirmative responses. Challenging each other to think critically in a civil and friendly environment will be our ongoing challenge for the course.

**Classroom Environment:** All students at St. Edward's University have the right to a calm, productive and stimulating learning environment (in the classroom or online). Moreover, instructors are responsible for nurturing and maintaining such an environment. Lively discussion is not disruptive behavior. However, behavior that interferes with learning will not be tolerated. Please be respectful of other students and their points of view and their learning styles. Disagreements and debates are vital parts of academic study, but be civil in your interactions.

**Academic Integrity Policy:** Per the Student Handbook, "St. Edward's University expects academic honesty from all members of the community, and it is our policy that academic integrity be fostered to the highest degree possible. Consequently, all work submitted for grading in a course must be created as a result of your own thought and effort. Representing work as your own when it is not a result of such thought and effort is a violation of our code of academic integrity. Whenever it is established that academic dishonesty has occurred, the course instructor shall impose a penalty on the offending individual(s). **The maximum penalty for a first offense is failure in the course, and if that penalty is imposed, the student does not have the option of**

**withdrawing from the course.”**

<http://think.stedwards.edu/deanofstudents/studenthandbook/academicintegrity>

### **Dropping/ Withdrawing Policy:**

- It is the student’s responsibility to be aware of add/drop/withdraw and refund deadlines. See web link: <http://think.stedwards.edu/registrar/datesanddeadlines>
- Students should also communicate with their instructor, academic advisor, and financial aid advisor.
- State policy on “WAs” (withdrawal due to absences). Some instructors choose to WA a student after a specified number of absences; other instructors never issues WAs. If you choose to, you may include this language:

An instructor has the option, but is not required, to request the registrar to assign a grade of WA (Withdrawal Due to Absences) to a student who has excessive absences from a **class by the last day to withdraw from the specific course**. The determination of what constitutes excessive absences is the prerogative of the instructor.

**Incomplete Grades Policy:** The grade of I (Incomplete) is given at the sole discretion of the instructor and with the approval of the dean. A grade of I must always be requested by the student; it is not automatically earned. To qualify for an Incomplete, students must have completed no less than one-half of the work in a course and have attended no fewer than one-half of the scheduled class meetings. The student must be able to document that the situation qualifies as exceptional. Exceptional circumstances include but are not restricted to a death in the immediate family; the onset of a serious medical condition; or an unexpected change in job or family circumstances.

Exceptional circumstances do not include situations that can be considered a normal part of living. Course work must be completed and a grade submitted by the instructor to the Office of the Registrar no later than October 1 for summer courses, March 1 for fall courses and July 1 for spring courses, or a grade of F will be entered on the transcript.

**Disability Services/Special Circumstances:** St. Edward’s University complies with the Americans with Disabilities Act in making reasonable accommodation for qualified students with a disability. If you have an established disability as defined in the Americans with Disability Act and would like to request accommodation, please let me know early in the semester or as soon as you are eligible. Students will need to present documentation of their disability to the disability coordinator in Academic Planning and Support Services located in Moody Hall. Documentation guide:

<http://think.stedwards.edu/apss/requirementsproperdocumentation>

**Student Support Services:** Links to all student services may be found on the New College advising page:

<http://think.stedwards.edu/newcollege/helpful-links>

**Computer Competencies:** All Undergraduate and New College students are required to satisfy the Computer Competency Requirement. New College students will not be allowed to register for Moral Reasoning, a CGI class, or Capstone until all competencies are completed. For more information:

<http://academic.stedwards.edu/competency/>

## **9. Time Needed to Complete Course**

There are seven working one-week periods in the course. Each week's period will be about 10 hours reading, 6 hours posting, 2 hours viewing films, and 2 hours writing short essays.