

Biology/Anthropology 2700
Fall 2019
Introduction to Human Evolution

Faculty - H. Gill-King 940-565-4335 harrell@unt.edu

Biol. A-403-D

Office Hours- No undergraduate hours. See the instructor before or after class.

Proctor/Grader – Mr. Soham Sengupta, Biol. A-356/357 sohamsengupta@my.unt.edu

Office Hours TBA

Laboratory Coordinator – A. Curran (940-565-2011) curran@unt.edu

Office Hours by Appointment

Laboratory Instructors – Ms. Amy Eddins amy.eddins@unt.edu

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Introduction – This is a first survey course in human evolution. The common themes, which unite all of the topics, are *human origins* and *variation*. The course begins with a brief review of the history of evolutionary ideas and proceeds to a discussion of genetic mechanisms of organic evolution. The second group of topics focuses on human variation and microevolution. The third segment of the course deals with the primate antecedents of humans and the living primate relatives of man. The course concludes with a survey of fossil human ancestry spanning the last 6 million years of hominid evolution.

Required Texts –

1. *Physical Anthropology*, 12th ed. Stein and Rowe, McGraw-Hill Co., ISBN 978-1-259-92040-0.
2. *Physical Anthropology – A Laboratory Manual*, 8th ed., D. France
3. **Additional testable readings** will be announced and posted on the course Canvas site for each of the four parts of the course. You are responsible for these announcements and for the readings.

Testing and Grading – The course is based upon a combination of performance grades in *lecture and laboratory*. There will be four lecture examinations during the semester, one for each section of the material. All count equally, (100 points), and each will cover a specified set of lectures and readings. Typically, each test will consist of 70% objective items from the textbook, and 30% short essay items from lecture and assigned readings posted on Canvas. At the end of the semester, the lowest lecture grade will be dropped and the lab grade substituted for it, i.e. lab counts for 25% of the final course grade, (see Laboratory Grading below). Note, however, that **one must pass the laboratory portion of the course in order to pass the course**. “Passing” the lab means getting at least 60% of the points possible in lab. “Passing” the course means attaining a final average of 60% or better overall. **If a student misses a lecture exam, it will be counted as the “dropped” grade**. Therefore, it is a good idea not to miss any exams in order to achieve maximum benefit from the drop policy. There are no makeup examinations in the lecture portion of the course. The laboratory portion of the course is worth 380 points distributed as: 12 quizzes @ 5pts ea; 12 outside assignments @ 10 pts. ea; 2 major practical exams @ 100 pts. ea. = 380 pts.

Lecture and Laboratory grades will be determined as follows:

A = 90-100%	360-400 lect.	342-380 lab.
B = 80-89	320-359	304-341
C = 70-79	280-319	266-303
D = 60-69	240-279	228-265
F = <60	< 240	<228

No examinations will be handed out after the first student has completed an exam and left the classroom....Therefore, do not be late to exams. The instructor reserves the right to conduct short unscheduled and unannounced graded exams when necessary to reinforce full compliance with reading

assignments, attendance, and other student responsibilities. If you are a commuter, LEAVE FOR CLASS EARLY on exam days.

ALL EXAMINATION DATES WILL BE ANNOUNCED IN CLASS. Students are responsible for information about tests, assignments, etc. given in their absence.

Attendance – Students are expected to regularly attend all scheduled lectures and lab sessions. Missed work and makeup exams in the lab are at the discretion of the laboratory instructor. **Students who miss three laboratory sessions during the semester will fail the lab, and therefore, the course as well.** Your instructors take a dim view of chronic lateness. If you are going to be more than a few minutes late, do not come to class. Get the notes and announcements from someone else. You are liable for any assignments, test notices, and any other information given in your absence. **The instructors reserve the right to alter any or all of the syllabus in the interest of improved student learning.** Do not sleep in class. Do not read the newspaper in class. Do not study for other classes. Do not text or use communication devices. Go somewhere else to do these otherwise useful things. NOTE: Ordinarily, class lecture material *is not* available online.

Electronic Equipment –

1. You may record if you like, but you must operate your own equipment. **Keep cellular communications and personal entertainment devices turned off during class. If you are using a laptop, tablet, I-pad, etc. for note taking, sit in the back of the classroom so that your screen is not a distraction to those in front of you.** Repeated infractions will result in an administrative drop. The same applies to texting and digital camera use. **Do not confuse ‘data capture’ with ‘learning’.** *Note taking is an important intellectual skill; learn how to do it.*
2. Class lecture materials and discussions are proprietary. Appearance of class material on websites, blogs, facebook, or any other audio or video digital media or source will result in prosecution under relevant state and federal statutes.
3. During all examinations electronic equipment must be turned off and stowed out of sight.
4. **Visible possession of calculators, (unless authorized), and/or telecommunications gear during examinations will be regarded as evidence of cheating. NO EARBUDS. NO SMART WATCHES.**
5. **Webnotes** – In recent semesters ersatz versions of Biol/Anth 2700 notes, exams, etc. have appeared on various web sites. We have not authorized and do not endorse these. *Caveat emptor.*

Academic Dishonesty – For purposes of this course academic dishonesty is defined as the ‘unauthorized giving or receiving of assistance on any graded assignment’. The University Bulletin provides extensive definitions and policy information on this important subject. If you are in doubt about whether something is academically dishonest, it is a good idea to ask, or consult the University Bulletin. Severe consequences will attend cheating in any form. Specifically, these begin with a failing grade in the course, and progress to various administrative disciplinary measures.

ADA Accommodations-

“The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at 940.565.4323.” Students requiring accommodations must present their ODA paperwork to the instructor the first week of classes.

Student Learning Objectives-

- Students will be able to describe the historical and social contexts in which the modern understanding of evolutionary processes arose.

- Students will be able to distinguish scientific statements from non-scientific statements, (e.g. the difference between scientific statements about evolutionary change and others having to do with “Intelligent Design”, “Scientific Creationism” and other non-scientific rubrics).
- Students will master an understanding of molecular, classical, and population genetics sufficient to explain the general mechanisms of evolutionary processes and modalities
- Students will be able to explain the processes of micro- and macro-evolution as they apply to changes in organisms through time.
- Students will comprehend the basic evolutionary mechanisms which underlie modern human variation around the planet, and the adaptive nature of variations where relevant.
- Students will be familiar with mankind’s extant primate relatives, and will be able to discuss their variety from the perspective of adaptations to their respective habitats.
- Students will be able to explain the contributions of primatology to a deeper understanding of ourselves biologically and behaviorally.
- Students will be familiar with the general tools and assumptions of paleoanthropology.
- Students will be able to describe, in general terms, the human fossil record as currently understood.
- Students will be able to describe human ancestral groups with their cultural and technological productions, their geographic and temporal distributions, and their physical characteristics.
- Students will be able to relate current theories of the peopling of various land masses.
- Students will understand the implications of mankind’s evolutionary past to modern issues of disease, nutrition, aggression, and social organization.

Readings: Be sure you have done the reading within the time block indicated; preferably *before* the material is discussed in class. All assigned readings are testworthy *whether the material has been discussed in class or not*. Some posted readings are accompanied by study questions. These are often the source of questions appearing on your exams. Additional reading assignments may be announced or posted from time to time; *consult Canvas regularly*.

Class Week No.

Historical background; Mendelian, Molecular, and Population genetics: Mechanisms of evolution

The first portion of the class will review evolutionary thinking within a historic context. The molecular basis for evolutionary change will be presented then expanded to classical ideas about heredity, (Mendelian genetics), and their place in the genetics of populations, (a relatively non-mathematical approach). Darwin’s “natural selection” will be placed in context along with other important mechanisms of micro- and macroevolution, e.g. genetic drift, chromosomal rearrangement, mutation, and punctuated equilibrium. Population genetics will be presented as a means of measuring natural selection.

1. Chs. 1, 2
- 2 Ch. 3
- 3 Ch. 4
- 4 Ch. 5

SEE POSTED READINGS ON CANVAS

EXAM #1

Contd.

Human variation: adaptation and microevolution

The essence of physical anthropology is an attempt to understand human origins and variation. In this section, principles of molecular and population genetics mastered in the previous section of material will be used to clarify questions about the extant varieties of humankind. Both anatomical and physiological/molecular

variations will be considered for human populations in a variety of adaptive regimes such as desert, high altitude, tropical, and temperate zones.

5 Ch. 6

6 Ch. 16

7 Ch. 17

8 Variation contd.

SEE POSTED READINGS ON CANVAS

EXAM #2

The primate background: Man's ancestors and near relatives in the primate world.

A careful consideration of the non-human primates is essential to an understanding of human biology and behavior. Following a survey of general mammalian adaptations, we will consider what can be learned about human behavior, (e.g. reproduction, communication, social organization, aggression, etc.), from a comparative study of the living primate relatives of man. Particular attention will be given to the evolutionary basis of symbolic behaviors such as toolmaking, language, and social organization.

9 Ch. 7

11 Ch. 8

12 Ch. 9, 10

SEE POSTED READINGS ON CANVAS

EXAM #3

Human paleontology: The fossil record of hominids – losers and winners.

This section describes the taxonomy and phylogeny of the transition from hominoidea to the early hominins and, ultimately, to modern humans as interpreted through the fossil record. The section will begin with a discussion of relative and chronometric dating techniques, paleoenvironmental reconstruction, and taphonomy. Fossil sequences will be critically reviewed from the perspective of temporal and geographic distribution, biological variation, and cultural-technological correlates. The section will end with a discussion of the peopling of the New World and Australia with special attention to the Multi-regional vs. Afrocentric hypotheses of modern human origins.

13 Chs. 11, 12

14 Chs. 13, 14

15 Ch. 15

SEE POSTED READINGS ON CANVAS

16 EXAM #4 (The **fourth exam will occur at the time scheduled for the final exam for this class.** Consult published exam times.

Note: Students enrolled in Texas public post-secondary institutions for the first time on or after 09-2007 are subject to the “six-drop rule”. This means that one is allowed ONLY SIX drops during the course of one’s undergraduate program. THINK CAREFULLY before using these allowed drops during your first two years.

Students requesting letters of recommendation to graduate or professional schools must have

- (1) Earned a performance grade of “A” in this course, and**
- (2) Be willing to sign a document certifying his/her understanding of, and agreement with, the principles of modern scientific evolutionary theory.**