

COURSE OUTLINE
Anthropology 2226A-001
Biological Anthropology

Fall 2021

Lectures: Asynchronous (with lab access by appointment, Wed. 1:30-4:30 pm)
Teaching Lab: SSC-2257

Instructor: Dr. Ian Colquhoun
Office: SSC-3428

Office hours: Contact me.

Email: colquhou@uwo.ca

Teaching Assistant: **Panchala Weerasinghe** (pweerasi@uwo.ca -- Contact Panchala concerning access to lab specimens. Wed. 1:30-4:30).

Credit value: 0.5 credit

Calendar Course Description: A survey of the major areas of biological anthropology, including heredity, paleo-anthropology, human adaptability and variability, and growth and development.

Prerequisite(s): Anthropology 1020 (or the former Anthropology 1020E) or Anthropology 1025F/G and Anthropology 1026F/G.

Antirequisite(s): None.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. The decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Course Syllabus:

Biological (or, physical) anthropology is a very diverse anthropological subfield encompassing such research as: the study of human evolution (i.e., paleoanthropology), the study of living and fossil non-human primates (i.e., primatology and paleoprimateology), the study of the human skeleton (i.e., human osteology), and the study of adaptations in living human populations (i.e., human biology). As in other areas of evolutionary biology, the synthetic theory of evolution provides the conceptual framework for considering the biological processes and fossil evidence relevant to the evolution of the human species. This means our study of human evolution and adaptation will also draw on aspects of numerous fields, including: genetics, population biology, primatology, conservation biology, ecology, and geology.

The course has a four-part structure, and will pursue an "issues-oriented" perspective:

- i)** We begin the course with a consideration of the philosophy of science and an examination of the history of evolutionary thought. In this first segment of the course, we will consider the genetic basis of short-term and long-term evolutionary change.
- ii)** The second segment of the course deals with the evolution of the Order Primates; this segment also includes an overview of the taxonomy, biogeography, and socioecology of those mammalian species most closely related to humans -- the living non-human primates.
- iii)** The third segment in the course focuses on the field of paleoanthropology -- the study of the fossil record of hominin evolution.
- iv)** The fourth, and concluding, segment of the course inspects the adaptations, biologic variation, and biocultural behaviour of contemporary human populations. Throughout the term, in keeping with an "issues-oriented" perspective, attention will also be given to any material relevant to the course that may appear in the academic literature and/or be reported in the media as the term unfolds.

This is also a lab course, which adds an "applied" aspect to the course. A significant portion of your course grade will be based on the work you complete during lab sessions. These will be comprised of practical exercises that will allow you to get some first-hand experience in the techniques of biological anthropology, to make quantitative analyses and conduct qualitative observations, and to interpret and report on those analyses and observations. That said, concerning the lecture portion of the course, questions that arise from the course readings or lab exercises are encouraged – this means you should endeavour to be aware of material in the course text and/or weekly slide-deck files that can be of use in completing the lab exercises! A full course schedule including a week-by-week breakdown of topics and assigned readings will be available on the course's OWL site before the first day of class.

Learning Outcomes:

Upon successful completion of this course, students will:

- be able to appreciate, recognize, and communicate the breadth of material that constitutes the field of biological anthropology (much of which is often reported in the popular media, but not explicitly identified as being “biological anthropology”);
- develop the ability to identify and describe major theoretical issues in the various sub-areas of biological anthropology (i.e., evolutionary theory, primate biology and taxonomy, paleoanthropology, and human biology);
- also gain familiarity with basic quantitative methods employed in comparative osteology, paleoanthropology, and human skeletal biology.
- acquire recognition of active and promising research fronts in biological anthropology and gain some background for predicting the directions where future research is most promising for major advances in the field.

Course Materials:

Our course text is: Marks, Jonathan, 2017. *The Alternative Introduction to Biological Anthropology* (2nd Edition). New York and Oxford: Oxford University Press.

The following online Open-Access biological anthropology text may prove to be a useful supplementary source of information:

https://socialsci.libretexts.org/Bookshelves/Anthropology/Physical_Anthropology/EXPLORATIONS%3A_An_Open_Invitation_to_Biological_Anthropology

Evaluation:

Course requirements (aside from the expectation of keeping up with the weekly readings) will include:

- three lab assignments (10% each, for a total of 30% of final grade);
- a mid-term test (Oct. 19th-20th - 35% of final grade);
- a final examination (date & time to be announced - 35% of final grade).

Lab Reports (3 x 10% each) – 30%

Each student is responsible for completing three required lab assignments during the course of the term. The lab assignment topics represent major elements of the material covered in the course. While the in-class lecture portion of the course has been moved to asynchronous delivery, each of the three Lab Groups can continue to access the Bioarchaeology Teaching Lab (SSC 2257) Wed. 1:30-4:30 -- students seeking to access SSC 2257 and inspect skeletal cast specimens will need to contact our course TA, Panchala (pweerasi@uwo.ca). The class will be divided into three lab groups for purposes of completing the lab exercises. Switching lab

groups will be not be allowed without documentation of medical or compassionate grounds. Lab groups will work in rotation. Each lab group's assignments are to be handed in one week from the date the lab work was done (i.e., lab reports are due in the next class after the lab). Submission of late lab assignments must include documentation to account for the late submission --under such circumstances, there would be no late penalty assessed on late lab reports. Without such documentation, late lab reports will be penalized 0.05% for each day the lab report is late, up to a maximum of 3 days. **There will be no make-up labs.**

Midterm Test – 35%

The mid-term test in the course will occur in the form of a 'take-home' test which will be administered October 19-20th, 2021 (during Week 7 of the course). The mid-term test will cover material from Week 1 through Week 6 of the course.

Final Exam – 35%

The final exam in this course will take place during the designated Dec. 10th, 2021 to Dec. 22, 2021 exam period. The date and time of the final exam will be distributed via an OWL 'Announcement', and posted on the course OWL site.

Answers on both the mid-term and final exams will follow a short essay format. Material covered on the exams will come from both the weekly video and slide-deck presentations as well as the weekly readings, but material highlighted in the weekly slide-decks will be emphasized. The slide decks also include material that is not covered in the course text (a good reason to appreciate *why* the differences between what Marks presents in his text and what gets presented in the slide-decks are worth paying attention to!).

Part I: Genetics and Evolutionary Theory:

September 8 (wk. 1): Course introduction – Doing physical/biological anthropology.

Readings: Marks, ch. 1 & review ch. 14;

September 15 (wk. 2): Genetics in physical anthropology.

Readings: Marks, ch. 2 and ch. 3;

Pearson, 2006. "What is a Gene?". *Nature* **441**: 398-401 (May 25th issue).

Everyone needs to read this brief commentary for Lab 1 -- the pdf is available on the Course OWL site (under 'Resources') and via www.lib.uwo.ca -- go to the "Catalogue", click on "Journal Search", and enter "Nature"; click on the No. 1 search result, then click on the "Nature (London) -- Nature" link for online access, and go to the journal's archives to find Pearson, 2006.

Lab 1 (Group A): Mammals and Primates.

September 22 (wk. 3): Genes and evolution at the levels of the cell, the individual and the population.

Readings: Marks, ch. 4 and ch. 5;

Lab 1 (Group B): Mammals and Primates.

September 29 (wk. 4): Macroevolution, speciation and taxonomy.

Readings: Marks ch. 6;

see also: Rennie, 2002. "15 Answers to Creationist Nonsense". *Scientific American* 287(1): 78-85 (available through www.lib.uwo.ca -- do a Catalogue Search for *Scientific American*, and then access the archives).

Lab 1 (Group C): Mammals and Primates.

Part II: Primate Evolution, Biology and Behaviour:

October 6 (wk. 5): Evolution of the Order Primates.

Readings: Marks, ch. 7;

Lab 2 (Group A): The Fossil Hominins.

October 13 (wk. 6): An introduction to the extant (living) primates, and using extant primates as

models of early hominin behaviour and ecology.

Readings: Marks, ch. 8;

Lab 2 (Group B): The Fossil Hominins.

***October 20 (wk. 7): *MID-TERM TEST (35% of final grade) --** to be distributed via OWL as a 'take-home' mid-term test on Oct. 19th, with submission of test answers on Oct. 20th.

Part III: Hominin Evolution:

October 27 (wk. 8): Hominin origins, Pliocene hominins and "Early *Homo*".

Readings: Marks, ch. 9

Lab 2 (Group C): The Fossil Hominins.

***November 3: *F'21 Reading Week -- no class!**

November 10 (wk. 9): Middle and Late Pleistocene members of the genus *Homo*.

Readings: Marks, , ch. 10;

Lab 3 (Group A): Human Variation and Adaptation.

November 17 (wk. 10): The origin of anatomically modern humans (AMH).

Readings: Marks, ch. 11;

Lab 3 (Group B): Modern Human Variation and Adaptation.

Part IV: Biology of Modern Humans:

November 24 (wk. 11): Human adaptation – Reproduction, growth and development.

Readings: Marks, ch. 12;

Lab 3 (Group C): Modern Human Variation and Adaptation.

December 2 (wk. 12): Human variation and microevolution

Readings: Marks, ch. 13.

December 9 (wk. 13): Human variation and microevolution.

Readings: Marks, ch. 14;

* **December 10-21, 2021: FINAL EXAM PERIOD; the final exam (35% of course grade) will only include material covered since the midterm. Date, time and location of the final exam to be announced by the Registrar's Office.**

Course Specific Statements and Policies:

Statement on Seeking Special Accommodations:

No accommodations will be granted retroactively more than 10 days after an assignment's due date or a missed quiz or test. Please see your Faculty Academic

Counsellor immediately if you will be seeking accommodations based on medical or compassionate grounds.

Statement on Plagiarism:

Students must write their assignments in their own words. Whenever students take an idea from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing. It is also a scholastic offence to submit the same work for credit in more than one course. Plagiarism is a major scholastic offence.

Institutional Statements and Policies

All students should familiarize themselves with Western's current academic policies regarding accessibility, plagiarism and scholastic offences, and medical accommodation. These policies are outlined, with links to the full policies, at:
http://anthropology.uwo.ca/undergraduate/academic_policies.html