

Anthropology 4422G/9122B
Activity and Energetics in the Past
PROVISIONAL COURSE OUTLINE
Winter 2023

Version: June 9, 2022

This course is cross-listed with graduate and undergraduate students. Enrolment for undergraduate students requires submission of an application for consideration. The application is available through the summer on the [Anthropology Department](#) website.

Lectures: Thursdays 9:30 am - 12:30 pm
Classroom: SSC-3227

Instructor: Dr. Jay Stock
Office: SSC-3316
Office hours: Please refer to the course site in OWL.
Email: jay.stock@uwo.ca

Credit value: 0.5 credit

Prerequisites: Registration in fourth year in Anthropology and permission of the instructor via application. Anthropology 2226A/B and 3336F/G are recommended. Students should have maintained an average of 80% in their third year.

Antirequisites: None.

Course Description:

Energy is a measure of the capacity to do work. Habitual activity and energy use are fundamental characteristics of the biology of any species. Both are extremely dynamic and variable throughout human evolution and prehistory in relation to environmental variation, cognitive evolution, and functional morphology. This course will explore the processes by which energy is captured from the environment and the ways that our changing relationship with energy have shaped the evolution of human behaviour and biology. We will consider the relationship between energy and activity in the palaeobiology of fossil species, between populations in prehistory, and investigate the ways which our energetic ecology influences human health today. A range of topics will be considered in relation to our understanding of energetics and activity, including diet and foraging behaviour, growth and body size, locomotion, reproduction, immune function, and changing patterns of labour in the past. Throughout the course we will consider the interactions between four inter-related factors: energy, activity, cultural change and human biology.

Course Structure:

Class time will be divided between lectures, group discussions and student presentations. 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. Students will be expected to read and be prepared to discuss the assigned reading.

Learning Outcomes:

On successful completion of this course, students will be able to:

1. Explain the fundamentals of energy procurement, metabolism and expenditure in human biology
2. Describe how energy is utilized throughout the lifespan, and how life history variation relates to adaptability
3. Distinguish the unique characteristics of human activity and energetics relative to other species, and identify what is known about the evolution of human energetics
4. Evaluate the role of energetic and behavioural factors in human dispersals and the colonizing of new environments.
5. Critically evaluate the role of dietary transitions in the energetic and behavioural ecology of our species.
6. Understand the relationships between sexual dimorphism, reproductive and energetic ecology and their impact on activity in the past
7. Evaluate the roles of activity and energetic ecology in recent epidemiological transitions and their impact on contemporary health.
8. Generate an effective proposal for new research to answer a novel research question of current relevance to the field.

Course Materials:

There is no single textbook available to sufficiently cover material relevant to this course, but a recent interest in activity and energetics within the field of biological anthropology has led to a range of research and review papers on the topic that will form the reading in this course. Relevant journal articles and book chapters will be made available under the Course Readings tab of the OWL course website. New developments within the field and articles chosen by students will be made available via the OWL site as the course progresses.

Evaluation:

Students will be expected to attend all classes, and to critically engage with the reading and in class discussions. Evaluation will consist of three components, as outlined below.

1. Class Participation

(worth 15% of final mark in total, 10% for questions/comments, 5% for summary of research paper). All students are expected to participate in class discussion. Beginning the 2nd week of class all students are required to bring one comprehensive question or comment they've developed for each assigned chapter or article that highlights their critical thinking and stimulates discussion and debate. These may be typed or hand-written and must be handed in at the beginning of class. These will be worth 10% of the course mark. In addition, students will research one additional research paper for each tutorial session that are related to the weekly theme and their own research topic. They will submit a concise summary (200 words maximum) of the work with their question or comment and discuss the research in the class.

2. Species summary and interpretation

(15% of final mark). During weeks four through six, each student will be required to select one fossil hominin species and prepare and submit a 20-minute Powerpoint presentation summarizing what we know and might reasonably infer about the habitual behavior and diet and energetic ecology of that species on the basis of the archaeological record. Emphasis should be placed on the differentiation of sources of evidence, and what remains unknown/untested. The presentations should draw on the theoretical perspectives explored in the early weeks of the course but will involve independent research on the palaeobiology of past populations.

3. Research Paper

(40% of final mark, Due MARCH 15th by 11:59pm). Research topics should provide critical review and creative perspective on current research relating to one of the broad themes covered in the course. Undergraduate essays should not exceed 3000-3500 words (approximately 12-14 pages, double spaced), graduate student essays should not exceed 4500 words (18 pages), not including the title page, abstract, references cited, figures, tables, figure/table captions, and/or appendices, and topics must be approved by the course instructor. Each essay should include an abstract of no more than 250 words.

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.

The essay will be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

4. Research Grant Proposal

(30% of final mark, submitted during exam week). Every student will be responsible for developing a hypothetical research project, presenting it to the class, and submitting a written proposal. Writing a research proposal is an essential skill in academic research and involves a number of transferable skills. A research proposal must identify a research question, determine what data must be collected in order to answer the question, select or develop an appropriate research methodology, and identify an appropriate study area or research context to test hypotheses. The study of energetics and activity in the past is an emerging field, and many relevant and unanswered research questions will arise in the discussions that we will have in this course. Students will pick a question that interests them from the material discussed in the course and will develop a hypothetical research project designed to answer that research question. The model for the proposal will be a mock grant proposal to the Leakey Foundation, one of the primary sources of research funding in Palaeoanthropology. Once you have selected a topic and had it approved by the course instructor, you will write and receive feedback on a 200-word point form summary that includes a research question and a statement of context and importance of the research question. This will be developed into a 1000-word proposal to be presented to the class in the second half of the term. The proposal will include a:

- a) Concise statement of your research objectives or the specific questions to be answered.
- b) Description of the importance of the research project to your specific field and to the study of human origins. What is the relationship of your research to the mission of The Leakey Foundation (to increase scientific knowledge, education, and public understanding of human origins, evolution, behavior and survival)?
- c) Brief history of attempts to answer the same or related questions by other researchers.
- d) Detailed explanation of the information needed to answer the research question(s) and your methods (how you plan to gather this information).
- e) Summary of any broader implications and your future goals relevant to proposed research.

Each student be required to present their research proposal to the class (March 26th), providing a 10-minute oral summary with 10 minutes for discussion. Other students are expected to critically engage with the proposal and provide constructive feedback. Students will then have the opportunity to revise their proposals in light of the discussion and submit a final version for evaluation, which will worth 25% of the final mark in the course.

Late Assignments: Extensions on assignments will only be given in the case of major medical or personal emergencies as first approved by the academic counselling office. Without an approved extension each day past due (including weekends) will result in the deduction of 5% off the grade for that assignment. Assignments more than five days late will not be accepted and the student will receive a grade of zero for that assignment.

Statement on Seeking Special Accommodations:

Please see your academic counsellor immediately if you will be seeking accommodations based on medical or compassionate grounds. No accommodations will be granted retroactively more than 10 days after an assignment's due date.