The Turkana Basin is home to many paleoanthropological discoveries that fundamentally reshaped ideas about human evolution. Important finds from the Turkana Basin, including Nariokotome (“Turkana boy”) and KNM-WT17000 (the “Black Skull”) will be highlighted in lecture and lab activities, and their relevance to the larger picture of human evolution will be explored. In addition to highlighting the key role that Turkana Basin fossils have played in human evolutionary studies, lectures, seminars, and labs will cover the complete span of our evolutionary history from Miocene apes and the earliest putative hominins to the evolution of modern humans. Field trips to discovery locations will provide students with the opportunity to understand the geological context of important fossils of the Turkana Basin.

Instructor: Dr. Jason E. Lewis
Office & Phone: Soc. Behav. Sci. S-537, 631-632-5800
Will be generally available to students for office hours during the module.

Teaching Assistants: There will be one graduate student TA and one undergraduate student TA available at the facility for the duration of the semester.

Text: There is no assigned textbook for this course; assigned readings will be given digitally to the students at the beginning of the course. The readings will be useful for clarifying concepts discussed in class and for supplying additional examples from those presented in lecture. Students will find that reading the material before attending lecture will make the lecture easier to follow. Other documents, review sheets, class announcements, etc, will be downloadable from the class Blackboard site (https://blackboard.stonybrook.edu).

Class Meetings: Monday - Saturday, 8:00 am - 12:00 pm, and 2:30 - 5:30 pm

COURSE LEARNING OBJECTIVES
The objectives of this course are to teach you to:

- Understand the application of the scientific method (i.e., how to construct and test a hypothesis).
- Be able to summarize and describe simple quantitative and qualitative observations and react to such observations critically.
- Understand the theory of evolution at both the molecular and organismal levels.
- Understand the nature of the fossil record and the geologic context of fossils.
- Understand the evidence for primate and human evolution.
- Understand the biology, ecology, and behavior of a number of extinct and living primate species, especially humans.
- Understand how the biology, ecology, and behavior of extinct human species is reconstructed.
- Begin to develop skills needed to be a critical consumer and ultimately user of the primary scientific literature (e.g., access and use Web of Science, critical consumption of online information).
- Be able to discuss critical events and ongoing issues in human evolution.

This course satisfies the following requirements of the DEC:

**Category E- Natural Sciences**

This course satisfies the following requirements of the SBC:

**Science, Technology, Engineering, and Mathematics (STEM+):**

Learning Outcomes for “Pursue Deeper Understanding” STEM+

1. Students must use the skills expected from their Versatility courses to study and practice them in greater depth, with further study applied to the area in which they are certified.

- **The structure and content of this course aims to build on the previous 3 Origins FS courses (by definition prerequisites) by practicing the skills learned in the daily labs and developing critical thinking skills in the daily seminars. Students move to a higher level of class format (daily labs, advanced fieldwork) and critical approaches (leading in-class discussions of assigned articles, final presentation, etc).**

**PREREQUISITES**

This course is part of a 5-course themed cluster (field school) and there are no prerequisites except permission from the instructor and/or study abroad office. Lectures will cover the basic concepts that are required to understand the material. A science background is not necessary for the successful completion of the course.

**COURSE REQUIREMENTS**

**Grading:**

- Lab exercises (30%) – lab exercises must be completed and handed in prior to the following lab.
- Seminar presentation (10%) – you (and possibly a partner) will be required to present for 5-10 minutes on one of the seminar readings. You and I will then lead a discussion on the paper.
- Individual/group presentation (20%) – on the final day you will present an individual/group presentation.
- Final exam (40%) – the exam consists of terms, matching questions, and short answer questions covering topics of the course.

**COURSE POLICIES**
Classroom etiquette:
While students are in class, they are expected to give their full attention to the lecture. Reading, talking, eating, texting or browsing on cell phones, leaving or packing up to leave before the professor has dismissed the class are inappropriate classroom behaviors and disruptive to other students. Also, please make sure that your watch alarms, pagers, and cell phones do not go off during class.

Attendance and preparation of assignments:
Students are expected to attend all classes; if you expect to miss one or two classes, please email your TA, who will inform me. Unexcused absences will lower your grade. Computer glitches (such as computers that die, hard disks that crash, flash drives that are lost, etc) will not be accepted as excuses for failure to do assignments on time, to study for exams, etc.

Policy Regarding Missed Exams:
Generally, makeup examinations are not given (and the score for the missed exam is entered as zero “0”). If you would like to be considered for a makeup examination, the following conditions must be met: 1. You should have a legitimate excuse for having missed the original exam, e.g., illness, family emergency. 2. You must inform me within 48 hrs before or after the scheduled exam date that you cannot take the exam. If the above conditions apply, then you will be allowed to do a makeup exam.

Americans with Disabilities Act:
If you have a physical, psychiatric/emotional, medical or learning disability that may impact on your ability to carry out assigned course work, please contact the Disability Support Services office in the Educational Communications Center (ECC) Building, room 128 (632-6748). DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation of disability is confidential.

Academic Integrity:
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

Critical Incident Management:
Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

Syllabus

Day 1-
Topic 1 Lecture: Introduction to course themes
Topic 2 Lecture: Anatomical terminology, human skeletal biology, and human skeletal morphology
Seminar I: Reading exercise
Seminar II: Presentation exercise
*Lab 1*: Human and primate cranial and postcranial anatomy

**Day 2**
Topic 1 Lecture: Phylogenetic reconstruction, dating, reconstructing diet
Topic 2 Lecture: Miocene apes of the Turkana Basin
Seminar I: Begun paper on Miocene ape phylogeny
*Lab 2*: Miocene apes (including pre-field trip background lecture by Meave Leakey)

**Day 3**
Field trip to Miocene sites: Losodok (morning) and Moruorot (pm)

**Day 4**
Topic 1 Lecture: Skeletal correlates of bipedalism
Topic 2 Lecture: Earliest putative hominins
*Lab 3*: Cladistics and the earliest hominins

**Day 5**
Topic 1 Lecture: Australopithecines – East Africa
Topic 2 Lecture: Australopithecines – South Africa
*Lab 4*: Australopithecines

**Day 6**
Field trip to Pliocene sites: South Turkwell and the Napudet Hills

**Day 7- Rest Day**

**Day 8**
Topic 1 Lecture: Robust australopithecines – East Africa
Topic 2 Lecture: Robust australopithecines – South Africa
*Lab 5*: Robust australopithecines

**Day 9**
Topic 1 Lecture: Early *Homo* and *Homo erectus* – East Africa
Topic 2 Lecture: *Homo erectus* outside of Africa

*Lab 6: Early Homo and Homo erectus*

**Day 10-**
Field trip to Pleistocene sites: Lobolo

**Day 11-**
Topic 1 Lecture: Middle Pleistocene hominins
Topic 2 Lecture: Neanderthals – skeletal morphology and behaviour
Seminar II: TBA – African MP article

*Lab 7: Middle Pleistocene Homo*

**Day 12-**
Topic 1 Lecture: Modern human origins – skeletal morphology and genetics
Topic 2 Lecture: Modern human origins - behaviour
Seminar II: TBA – article on evolutionary significance of skin pigmentation

*Lab 8: Neanderthals and earliest modern humans*

**Day 13-**
Exam
Topic presentations I
Topic presentations II

**Day 14- Class Over: Rest Day Before Next Module**

**Supplementary Readings (in addition to assigned seminar readings):**
Note: Many of these readings are listed in order to guide you to further reading for particular topics. Those that will be particularly important for you to read during the course are marked.

**Day 1 – Introduction and the human skeleton**


**Day 2 – Miocene apes**


Day 3 – Fieldtrip to Miocene ape sites
None

Day 4 – Earliest putative hominins


Day 5 – Australopithecines in East and South Africa
East Africa


**South Africa**


**Day 6 – Field trip to Pliocene sites**

None

**Day 7 – Rest Day**

None

**Day 8 – Robust Australopithecines**


**Day 9 – Early Homo and Homo erectus**

**Discovery of Homo habilis**


**Discovery of Homo rudolfensis**


**Discovery of the Turkana Boy**


Day 10 – Fieldtrip to Pleistocene sites
None

Day 11 – Middle Pleistocene hominins and Neanderthals


Day 12 – Modern human origins


Day 13 – Exam and presentations
None