

ANT 4468 – Health and Disease in Human Evolution

Class Meetings

- Spring 2024: 100% Online

Instructor

- Instructor – John Krigbaum, Ph.D.
- Office hours: via Zoom (link in Canvas), Mondays 10:00am – 12:00pm, by appointment.
- Email: krigbaum@ufl.edu (Canvas email preferred)

Course Description

Mortui viventes docent (“the dead are our teachers”)

Health and the human condition is of central interest within the field of anthropology, and the COVID-19 pandemic underscores concerns we all face moving forward. Covid-19 is a wake-up call, but it was only a matter of time. Diseases have had a profound effect on society and biology for millennia. Biocultural factors and recent human evolution has influenced human vulnerability to disease. Likewise, disease producing organisms (pathogens) have undergone their own evolution within the changing human condition (and associated man-made environments). Such co-evolution of humans and pathogens varies because of their respective adaptation to diverse ecologies. Humans are quite resilient, but different ecological contexts present their own set of health problems, often compounded, that humans must adapt to.

This course examines biocultural aspects of human health and disease from an evolutionary and bioarchaeological perspective. Environmental, genetic, physiological, and cultural factors are reviewed as to their role in affecting the well-being of different populations around the world. Skeletal pathologies present in the body may be indicative of a variety of disorders and diseases, including stress-related afflictions due to health disparities caused by myriad sociocultural factors (e.g., poor nutrition, duress, poverty). Anthropological perspectives and the prehistoric record through the lens of paleopathology sheds important light and perspective on these issues and complements students interested in the life sciences, including medicine and public health.

Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

Required Texts

Roberts, Charlotte and Manchester, Keith (2005) *The Archaeology of Disease*, 3rd edition. Ithaca, NY: Cornell University Press.

Lieberman, Daniel E. (2013) *The Story of the Human Body: Evolution, Health, and Disease*. New York: Vintage Books. (author's [webpage](#))

Additional required materials available in Canvas.

Materials and Supplies Fees: N/A

Description of Graded Work

This online course includes a variety of assessments to ensure that students learn the content covered in each module. Course requirements total 500 points. Participation is assessed through weekly Perusall Discussions (n=8) and Peer Group Discussions (n=6). Students should engage in discussion with their peers soon after the start of each module. In addition, there are Homework Assignments (n=6) that encourage web-based work, analysis, and synthesis, and Short Essays (n=6) that address specific prompts. Each module includes a Quiz (n=12) that covers required video lectures and readings. The course culminates in a final paper and presentation/product, approved by the Instructor, to be shared with the class during Module 12 (Weeks 15 and 16). Due dates for all assignments that are not discussion-based occur on Sundays at 11:59pm.

Assignment	Description	Modules	Points
Course Orientation	Online quiz to reinforce content of course as described in the syllabus	0	5
Perusall Discussions	Students engage with a newly assigned peer group and read a peer-reviewed article and evaluate related materials on a specific topic and discuss in depth using Perusall the key findings of the study/review. 10 points each. (n=8)	1, 3, 4, 6, 7, 8, 9, 12	80
Peer Group Discussions	Students engage with a newly assigned peer group to address a specific prompt. 5 points each. (n=6)	2, 4, 6, 8, 10, 12	30
Homework Assignments	Students complete an assigned homework that includes web-based work, literature review, and analysis. 10 points each. (n=6)	2, 6, 7, 9, 10, 11	60
Short Essays	Students complete a short essay (200-300 words) focused on a prepared prompt. 10 points each. (n=6)	1, 3, 4, 5, 9, 11	60
Quizzes	Online quizzes each module assess specific student learning outcomes focused on material covered principally in video lectures and required reading. 10 points each. (n=12)	1-12	120
Precis	Draft outline/precis for final paper (200-300 words) including at least three peer-reviewed articles that pertain to the selected and approved paper topic. 20 points. (n=1)	7	20
Presentation	Website and/or presentation product on student-approved project. 30 points. (n=1)	12	25
Final Paper	Final paper/project (~6-8 double-spaced pages, not including references) on approved topic of interest. 100 points. (n=1)	12	100

Grading Scale

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100%		C	74 – 76%
A-	90 – 93%		C-	70 – 73%
B+	87 – 89%		D+	67 – 69%
B	84 – 86%		D	64 – 66%
B-	80 – 83%		D-	60 – 63%
C+	77 – 79%		E	<60

Grading Rubric(s)

Participation Rubric (Perusall/Peer Group Discussions)

	High Quality	Average	Needs Improvement
Knowledgeable: Shows evidence of having done the assigned work.	Has grasped all the essential material needed for discussions and participation	Has grasped the basic material but shows some important lapses or superficial attention to materials	Shows little to no evidence of having read appropriate materials
Thoughtful: Evaluates carefully issues raised in assigned work.	Has given thought and anticipated how to contribute to the discussions and activities	Is thoughtful of responses to questions and discussions	Shows little interest in the issues raised
Considerate: Takes the perspective of others into account and listens attentively.	Engages actively, creatively and respectfully in participating in the class	Is tolerant of the perspectives of others but doesn't show much interest or engagement in other points of view	Is disrespectful of the views of others

Short Essay/Precis Assessment Rubric

	SATISFACTORY (Y)	UNSATISFACTORY (N)
CONTENT	Documents exhibit at least some evidence of ideas that respond to the topic with complexity, critically evaluating and synthesizing sources, and provide at least an adequate discussion with basic understanding of sources.	Documents either include a central idea(s) that is unclear or off-topic or provide only minimal or inadequate discussion of ideas. Papers may also lack sufficient or appropriate sources.
ORGANIZATION AND COHERENCE	Documents and paragraphs exhibit at least some identifiable structure for topics, including a clear thesis statement but may require readers to work to follow progression of ideas.	Documents and paragraphs lack clearly identifiable organization, may lack any coherent sense of logic in associating and organizing ideas, and may also lack transitions and coherence to guide the reader.

ARGUMENT AND SUPPORT	Documents use persuasive and confident presentation of ideas, strongly supported with evidence. At the weak end of the Satisfactory range, documents may provide only generalized discussion of ideas or may provide adequate discussion but rely on weak support for arguments.	Documents make only weak generalizations, providing little or no support, as in summaries or narratives that fail to provide critical analysis.
STYLE	Documents use a writing style with word choice appropriate to the context, genre, and discipline. Sentences should display complexity and logical sentence structure. At a minimum, documents should display a less precise use of vocabulary and an uneven use of sentence structure or a writing style that occasionally veers away from word choice or tone appropriate to the context, genre, and discipline.	Documents rely on word usage that is inappropriate for the context, genre, or discipline. Sentences may be overly long or short with awkward construction. Documents may also use words incorrectly.
MECHANICS	Documents should feature correct or error-free presentation of ideas. At the weak end of the Satisfactory range, papers may contain some spelling, punctuation, or grammatical errors that remain unobtrusive so they do not muddy the paper's argument or points.	Documents contain so many mechanical or grammatical errors that they impede the reader's understanding or severely undermine the writer's credibility.

Final Paper Assessment Rubric

	Great (5)	Good (4)	Average (3)	Poor (2)	Absent (0-1)
Topic (20 pts)	Topic is compelling, focused, and well defined.	Topic is interesting but may lack focus or a well-defined scope.	The topic is present but not well-developed.	The topic is unclear or wanders off topic.	The topic is not defined.
Evidence (30 pts)	A variety of support for every claim, and it is strong, concrete, and appropriate.	Support is provided for all claims, but it is not as strong or complete in some areas.	Supporting evidence for most of the claims, but some evidence may be unrelated or vague.	Some evidence, but in key places evidence is vague or missing.	Almost no detailed evidence to support the topic.
Organization (30 pts)	Paragraphs are focused with logical transitions. Introduction and conclusion are complementary.	The paper is engaging, but transitions/flow could be improved.	Paragraphs may need more focus or improved transitions.	Paragraphs are not focused or do not follow a logical order. Introduction or conclusions are missing.	Little or no organization.
Citations (10 pts)	All evidence is well cited in correct format.	All evidence is cited but with minor format errors.	Good citations but not enough of them.	Some citations but either incomplete or inappropriate.	No citations.

Format and style (10 pts)	Strong scientific writing style with appropriate language. Grammar and punctuation are correct.	The language is clear by scientific style could be improved. Minimal grammar and punctuation errors.	Writing is clear, but structure is simple or repetitive; repeated grammatical errors.	Grammatical mistakes or style begins to interfere with understanding. Informal or inappropriate style.	Frequent and serious formatting and style issues make the meaning unclear
----------------------------------	---	--	---	--	---

Weekly Schedule

Week	Topics and Assignments
Week 0	<ul style="list-style-type: none"> • Module 0: Orientation
Week 1 (Jan. 8 – 14, 2024)	<ul style="list-style-type: none"> • Module 1: Evolutionary Context • Required Readings/Works: Texts: Roberts & Manchester - Chapter 1 (21 pp.) and Lieberman - Chapter 1 (19 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Natural Selection and Infectious Disease (Karlsson et al., 2014) • Assignment 2: Short Essay: Natural Selection and Infectious Disease • Assignment 3: Module 1 Quiz (Due Jan. 14, 2024 at 11:59pm)
Week 2 (Jan. 15 – 21, 2024)	<ul style="list-style-type: none"> • Module 2: The Human Skeleton • Required Readings/Works: Text: Lieberman - Chapters 2-3 (42 pp.). Additional articles/videos available in Canvas. • Assignment 1: Homework, Part 1: Basic Bone Identification • Assignment 2: Homework, Part 2: My Favorite "Plates" in Cheselden (1733) • Assignment 3: General Discussion: Traumatic "Insults" to the Human Skeleton • Assignment 5: Module 2 Quiz (Due Jan. 21, 2024 at 11:59pm)
Week 3 (Jan. 22 – 28, 2024)	<ul style="list-style-type: none"> • Module 3: The Human Story • Required Readings/Works: Text: Lieberman - Chapters 4-6 (87 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Transitions and the Microbiome (Lewis et al. 2023) • Assignment 2: Short Essay: Transitions and the Microbiome • Assignment 3: What Does It Mean to Be Human? (optional) • Assignment 4: Module 3 Quiz (Due Jan. 28, 2024 at 11:59pm)
Week 4	<ul style="list-style-type: none"> • Module 4: Paleopathology Basics • Required Readings/Works: Texts: Roberts and Manchester – Chapter 2 (22 pp.) Lieberman - Chapter 7 (23 pp.). Additional articles/videos available in Canvas.

Week	Topics and Assignments
(Jan. 29 – Feb. 4, 2024)	<ul style="list-style-type: none"> • Assignment 1: Perusall Discussion: The Thousand-Year Graveyard (Gibbons, 2013) • Assignment 2: Peer Group Discussion: Lieberman (2013) • Assignment 3: Short Essay: Rigor in Paleopathology • Assignment 4: Module 4 Quiz (Due Feb. 4, 2024 at 11:59pm)
Week 5 (Feb. 5 – 11, 2024)	<ul style="list-style-type: none"> • Module 5: Congenital Disease • Required Readings/Works: Text: Roberts and Manchester – Chapter 3 (19 pp.). Additional articles/videos available in Canvas. • Assignment 1: Short Essay: The Bioarchaeology of Care • Assignment 2: Module 5 Quiz (Due Feb. 11, 2024 at 11:59pm)
Week 6 (Feb. 12 – 18, 2024)	<ul style="list-style-type: none"> • Module 6: Dental Disease • Required Readings/Works: Text: Roberts and Manchester – Chapter 4 (21 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Tracking Ancient Diseases Using Plaque (Weyrich et al., 2017) • Assignment 2: Peer Group Discussion: Dentist Horror Stories • Assignment 3: Homework: Sketchfab Lab Exercise • Assignment 4: Module 6 Quiz (Due Feb. 18, 2024 at 11:59pm)
Week 7 (Feb. 19 – 25, 2024)	<ul style="list-style-type: none"> • Module 7: Trauma • Required Readings/Works: Text: Roberts and Manchester – Chapter 5 (48 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Inter-group violence among early Holocene hunter-gatherers of West Turkana, Kenya (Lahr et al., 2016) • Assignment 2: Peer Group Discussion: TBD • Assignment 3: Homework: Sketchfab Lab Exercise (Due Feb. 25, 2024 at 11:59pm)
Week 8 (Feb. 26 – Mar. 3, 2024)	<ul style="list-style-type: none"> • Module 7 con't. • Assignment 4: Final Paper Precis ('Working' Title, 200-300 words, 3 peer-reviewed references, minimum) • Assignment 5: Module 7 Quiz (Due Mar. 3, 2024 at 11:59pm)
Week 9 (Mar. 4 – 10, 2024)	<ul style="list-style-type: none"> • Module 8: Joint Disease • Required Readings/Works: Texts: Roberts & Manchester - Chapter 6 (32 pp.) and Lieberman - Chapter 8 (29 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Economic intensification and degenerative joint disease: Life and labor on the Postcontact North Coast of Peru (Klaus et al., 2009) • Assignment 2: Peer Group Discussion: TBD • Assignment 3: Module 8 Quiz

Week	Topics and Assignments
	(Due Mar. 10, 2024 at 11:59pm)
Week 10 (Mar. 11 – Mar. 17, 2024)	<ul style="list-style-type: none"> • Spring Break
Week 11 (Mar. 18 – 24, 2024)	<p>Module 9: Infectious Disease</p> <ul style="list-style-type: none"> • Required Readings/Works: Texts: Roberts & Manchester - Chapter 7 (57 pp.) and Lieberman - Chapter 9 (39 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Biocultural perspectives of infectious diseases and demographic evolution: Tuberculosis and its comorbidities through history (van Doren, 2022) • Assignment 2: Peer Group Discussion: TBD • Assignment 3: Homework: Sketchfab Lab Exercise (Due Mar. 24, 2024 at 11:59pm)
Week 12 (Mar. 25 – 31, 2024)	<p>Module 9 con't.</p> <ul style="list-style-type: none"> • Assignment 4: Short Essay: TBD • Assignment 5: Module 9 Quiz (Due Mar. 31, 2024 at 11:59pm)
Week 13 (Apr. 1 – 7, 2024)	<p>Module 10: Metabolic and Endocrine Disease</p> <ul style="list-style-type: none"> • Required Readings/Works: Texts: Roberts & Manchester - Chapter 8 (31 pp.) and Lieberman - Chapter 10-11 (67 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Ancient Vitamin D Deficiency: Long-Term Trends (Brickley et al., 2017) • Assignment 2: Peer Group Discussion: Lieberman (2013) • Assignment 3: Homework: TBD • Assignment 4: Module 10 Quiz (Due Apr. 1, 2024 at 11:59pm)
Week 14 (Apr. 8 – 14, 2024)	<p>Module 11: Neoplastic Disease</p> <ul style="list-style-type: none"> • Required Readings/Works: Texts: Roberts & Manchester - Chapter 9 (11 pp.) and Lieberman - Chapter 12-13 (50 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: Paleo-oncology: Taking stock and moving forward (Kirkpatrick et al., 2018) • Assignment 2: Short Essay: TBD • Assignment 3: Module 11 Quiz (Due Apr. 14, 2024 at 11:59pm)
Week 15 (Apr. 15 – 21, 2024)	<p>Module 12: New Approaches</p> <ul style="list-style-type: none"> • Required Readings/Works: Text: Roberts & Manchester - Chapter 10 (11 pp.). Additional articles/videos available in Canvas. • Assignment 1: Perusall Discussion: The genetic legacy of African Americans from Catoctin Furnace (Harney et al., 2023) • Assignment 2: Peer Group Discussion: TBD

Week	Topics and Assignments
	<ul style="list-style-type: none"> • Assignment 3: Final Presentation/Product Uploaded Presentation/Product Uploaded For In-Class Viewing (Due Apr. 21, 2024 at 11:59pm)
Week 16 (Apr. 22 – 24, 2024)	Module 12 con't. Presentations Available For In-Class Viewing <ul style="list-style-type: none"> • Assignment 4: Module 12 Quiz • Assignment 5: Upload Final Paper (Due Apr. 24, 2024 at 11:59pm)

Student Learning Outcomes

At the end of this course, students will be able to...

1. Apply basic knowledge of evolutionary biology and anatomy to biocultural contexts in human evolution.
2. Identify / understand the role of biocultural variables and their influence in aspects of modern health and well-being.
3. Understand the role of bias in the archaeological and fossil record with respect to what can be known / inferred about health and disease in the past.
4. Review the ecological context of human and non-human primates and health-related variables associated with their evolution.
5. Review the biocultural context of fossil, archaeological, and modern humans and identify key transitions in health and well-being cross-culturally.
6. Identify key pathologies of bone and distinguish between specific and non-specific diseases.
7. Describe how the past can inform the present with respect to interpreting diseases and disease processes.

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. Students

will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/>, (352) 392-1575; and the University Police Department: (352) 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

