Animals and Human Affairs

Fall 2017 Syllabus

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CLASS LOCATION: Chemical Engineering 316

CLASS DATE & TIME: Tuesday 4:05 PM - 4:55pm, Thursday 3:00 PM - 4:55 PM.

REFERENCE MATERIAL:
The following books are useful but not required. Selected readings will be developed from them. They are all fun reads! We will also read some other material from primary and secondary literature that will be made available via the course website and class list. I routinely bring in new articles and press relevant to the course.
Key reading:
A Movable Feast: Ten Millennia of Food Globalization, by Kenneth Kiple
The Big Oyster: History on the Half Shell, by Mark Kurlansky
Four Fish: The Future of the Last Wild Food, Christopher Lane
The Horse: The Epic History of Our Noble Companion by Wendy Williams

COURSE OVERVIEW: This interdisciplinary course serves as an introduction to animal life, human and animal interrelationships, and national and international policies and their implementations that support animal life now and into the future. The course is divided into four thematic sections. The first section cover a brief overview of the history of animals, taking a long view. The second portion of the course discusses key human animal interrelationships in the context of animal evolution, covering examples across the animal Tree of Life. This section focuses less on current farm or ranch practices per se, although some mention of these do occur. Instead, this course explores how domestication has happened in key case studies, including bees in Asia Minor, silkworms in the orient, turkeys in the Americas, horses in Ukraine and Kazakstan, and sheep by farmers in the Fertile Crescent in Africa, the middle East and Western Asia. We also discuss discoveries of how coral reefs form based on theories from Darwin, and why corals are so unique as an ecosystem, how four fish have impacted how and what we eat and the fish populations we consume, and our American history with oysters. These vignettes are meant to cover enough examples to show breadth and depth of human-animal interrelationships. The last portion of the course is focused on how humans have decided to protect and manage animal diversity. What species are under threat, what are those threats, how do we know, and how have governments and international agencies responded? What is the science behind observing animals in the wild and understanding how to develop indicators of population and species losses? The course is meant to ultimately have a positive message about human and animal interrelationships and the work being done to assure continued health of humans and the planet. Finally, although there are no labs, the Thursday class will feature guests and mini-labs where you will be able to learn more about animal diversity as well as hear from experts on various topics related to domestication, policy and our long-term interdependency with animals of all shapes and stripes. We will also visit the collections at the Florida Museum to learn about the physical evidence of animals and both natural and cultural

heritage and their intersection.

FORMAT AND LEARNING OBJECTIVES: This course is an interdisciplinary special-topics course. Although it is primarily lecture-based, your instructor believes fundamentally in hands-on experiences. We will therefore have mini-labs on Thursdays where we will get to learn about some key organisms discussed in the class – these will include some exemplar specimens, including where possible archaeological material. We will have at least one field trip, to UF's Ordway-Swisher field-site, to learn about biodiversity monitoring approaches and the technology behind monitoring animals in the field. Midterms and final are fill-in-the-blank and essay based with a premium on synthesis. Theory and how we "know what we know" will feature. Core guiding concepts will provide a critical scaffold for the course, and will be "foregrounded" in lecture material. Learning objectives include: 1) Understanding the broad outlines of animal diversity and how it came to be over the last 650 million years of evolution, and how we know. 2) Understanding key interrelationships between humans, how humans have made decisions regarding domestication, the histories and origins of domestication, and how humans have modified animals through selective breeding. How do we gather evidence of past domestication?; 3) Understand how domestication changes humans – how much do our domesticated animals impact our lives and ; 4) Understand how policy frameworks have been develop to protect animal species; 5) Analyze debates about how to develop policy for animal biodiversity; 6) Use new tools to assess knowledge gaps in animal diversity and develop reports of how well policy frameworks are being met; 6) Synthesize knowledge from human-animal interrelationships past and present in order to understand the 21st century challenges facing how we manage and sustain animal resources; 7) Develop ability to link data to knowledge to policy actions, and advocate how this linkage can be strengthened.

Lecture Schedule (Tu&Th Che316)

Date	D.O.W	Course Topic
Aug. 29	Tue	Introduction to course, organizing principles for class.
31	Thr	Animal life in crisis: the evidence in all our systems. Mini-lab: fossil
Sep 5	Tue	How do we organize the diversity of life? Intro. To Metazoans
7	Thr	The tree of life, Metazoan phylogenies; Origins of Metazoans. Mini-lab: sponges
12	Tue	Origins of Metazoa cont… and major events in Metazoan history
14	Thr	Introduction to sponges and corals. Mini-lab: corals. *Vist to the invertebrate and vertebrate collections at the FLMNH*
19	Tue	Corals and coral reefs continued
26	Thr	Introduction to Platyhelminthes and parasitic lifestyles. Mini-lab: parasites and parasite adaptations
28	Tue	*Collections trip to zooarchaeological collections*
31	Thr	Intro. To Lophotrochozoa, a quick look at diversity, Oysters, History on the Half Shell; Freshwater mussels declines; Mini-lab: Oysters (live) and Freshwater mussel shells
Oct. 3	Tue	Invasive species – molluscan invaders, how they work, and the costs of cleaning it up
5	Thr	Midterm 1
10	Tue	Introduction to the Ecdyzosoa and Insecta; Humans and bees; Decline of bees and causes.
12	Thr	Humans and bees cont., humans and silkmoths. Insects as agents

		of disease: mosquitoes and ticks.; mini-lab: native bees, and silk.
17	Tue	Introduction to Deuterostomes; A look at diversity and take of invasive urchins and starfish.
19	Thr	Introduction to Phylum Chordata; The rise of chordates and the importance of fish to human ways of life. Sustainability of fishing in the 21st century. Mini-lab: diversity of deuterostomes.
24	Tue	Use of fishes cont. and the vertebrate invasion of land and air.
26	Thr	A new world domestication: Turkeys. The rise of mammals and humans; domestication of horses and its consequence in human history Mini-lab: archaeological turkey evidence.
31	Tue	Domestication of horses continued, breeding; From wild sheep at the dawn of human civilization to wool and veal.
Nov. 2	Thr	Midterm II
7	Tue	Current biodiversity declines – magnitude and evidence from animals. Causes of declines.
9	Thr	Policy frameworks – the convention for biological diversity (CBD). Setting goals. Aichi Targets. Sustainable Development Goals. Mini-lab: Guest speaker from GEO-BON
14	Tue	Assessing species at risk for extinction – how do we know? IUCN assessments and what we don't know.
16	Thr	Assessing trends in animal diversity changes – how do we know when animal populations decline? A look at one example. Mini-lab: using R to examine risk categories.
21	Tue	How we are monitoring species, from the age of exploration to satellites and sensors. The future of monitoring. Paper due.
23	Thr	Holiday
28	Tue	Final words, forecasting the future. Student presentations
30	Thr	Student presentations cont., Final preparation
Dec. 5	Tue	Final prep cont. if needed

Fieldtrip/Collections Visit: We will make a collections visit, to both animal collections, and archeological ones, and a field-trip to the Ordway-Swisher fieldsite to visit the biological monitoring they do there.

Powerpoint: All lecture notes (the Powerpoint slides) will be made available as Web and native PPT files. It will take approx. a week to get PPT/Web files online. I will burn CDs of notes for students, if requested. Making the material available online or on CD is done as a favor to the students and as time allows. I will try to do the best we can but the availability of PPT is not a given.

Website: I try to also set up a website for my classes, and a URL will be provided during the first week. I will *try* to get material on the website for you (assignments, other notes, questions and answers) but please be patient and understanding if it happens late or not at all.

Emailing Instructor and TA: Email is the least likely way to get a response from the Instructor in a timely manner, but I will do my best to at least read emails and respond; a response cannot be guaranteed.

Special Sessions: Special review sessions for lecture material ahead of midterms (and for sure for the final) will be considered if there is agreement that at least 30% of the students plan to attend. Low attendances at the initial sessions may result in fewer or none being offered later.

Provisional Grading:
Midterm 1: 20% of final grade
Midterm 2: 25% of final grade
Final: 35% of final grade (15% Part 3 of course, 15% cumulative)*
Short paper or presentation: 10% of final grade + up to 3% extra credit
Class participation/Lab Participation: 10% of final grade

There are no set number of As, Bs or Cs given out in this course (no strict curve). Grading will be based on naturally occurring sets of breaks between high scoring, medium scoring and lower scoring students. If everyone does well, everyone gets As. I will consider improvement a criterion for grading. If you do much better on the final compared to the midterms, we will downweight the midterm scores and upweight the final.

Short Paper/Presentation

There is a 4-8 page double spaced paper AND/OR 10-15 oral presentation (with multimedia aids) assigned for this course. You will get a full assignment from the instructor in mid-September, and the paper is due latest on November 21. The paper or presentation should be short review paper on a topic of interest about animal domestication or animal biodiversity policy. It should focus on more than one and preferably many (3+) papers on the same topic from the primary literature (that means a scientific paper and not the Internet, although you can use the Internet to find the papers!). You may cover any topic related to animal domestication and policy, but the instructor asks that you discuss what you choose to cover with them before starting. You can accrue up to 3% extra credit towards the final grade by doing both a paper AND a presentation, and if those are both excellent, the joint effort can bump you as much as half a grade (from say a B+ to A-). 1+ class period is set aside for oral presentations about your review topic.

Expected Behavior:

I expect each class member to behave as is befitting a professional situation like attending a class. The simple rules are: attend class, participate, and know campus policy about expected classroom behavior. I will treat each member with all respect as long as we feel that is reciprocated. Cheating will not be tolerated and we expect all students to follow codes of ethics as outlined by the University of Florida (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/). I love cell phones and mobile devices too, but please be respectful regarding use in the classroom. I promise to be respectful in return and do whatever I can to make the classroom experience great!

Policy regarding Religious Observance:

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, the instructors will discuss accommodations on a case by case basis. Reasonable requests will almost always be granted.

Policy regarding sexual harassment

The University of Florida policy on Discrimination and Harassment (http://hr.ufl.edu/manager-

resources/policies-2/sexual-harassment/) will be adhered to strictly. Any student who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status can make a formal complaint report to the Institutional Equity and Diversity officer and/or to the Dean of Students Office/Student Conduct and Conflict Resolution (DSO/SCCR). Resources and reporting options can be found online at https://www.dso.ufl.edu/sccr/resources/victims.

U Matter, We Care

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contactumatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.