

SYLLABUS
Mammalogy (4CR): Mammalian Ecology in a Changing World
IB 462 & NRES 442
4 CR

Instructor: Dr Tigga Kingston

Office: Morrill Hall 683

Office Hours: Tuesday 4-5 pm or by appointment

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Lectures: Tuesdays & Thursday, 11:00 am–12:20 pm
Natural History Building Room 2083

Labs: Section 1: 1:00 pm–3:50 PM
Section 2: 4:00 PM–6:50 PM
Natural History Building Room 3011

Required Text: Feldhamer, G. A., Merritt, J. F., Krajewski, C., Rachlow, J. L., Stewart, K. M. (2020). *Mammalogy: Adaptation, Diversity, Ecology*. United States: Johns Hopkins University Press. 5th Edition. ISBN-13 978-1421436524, ISB-10 1421436523.

Course Description

Discover the origins and evolution of mammals and explore the great range of adaptations that underpin contemporary mammalian diversity. With more than a fifth of mammal species threatened by human activities, we further explore how these adaptations and species' ecology make some mammals so vulnerable in our changing world. We will investigate the disruption and recovery of mammals' functional roles in ecosystems, their role in emerging infectious diseases, and efforts to secure sustainable mammal populations for future generations. Course format is lectures, with an emphasis on content derived from the primary literature, with embedded activities. Labs focus on learning the diagnostic and adaptive traits of major mammal lineages from collections of skulls, skins and skeletons, and report of assignments in short presentations.

Expected Learning Outcomes

Upon completion of this course, students will be able to:

- Describe the diversity of living mammals and the diagnostic and adaptive traits that define major clades.
- Identify the major threats and challenges that mammals face because of human changes to the environment and be able to link traits and ecology to species' vulnerability and to their ecological and evolutionary responses to threats.

- Discuss the role of mammals in ecosystems, and how these are disrupted or restored by mammal declines, extinctions, recovery and reintroductions.
- Identify the role of anthropogenic change in the emergence of infectious diseases from mammals and spread of pathogens to mammals.
- Characterize strategies for sustaining healthy mammal populations in a changing world.
- Succinctly and confidently present synopses of these issues to their peers.

Course activities and assessment of learning outcomes

The expected learning outcomes for the course will be assessed through:

- Semester assignment applying concepts and principles to a focal species or group of mammals
- In-class exams (two mid-terms & the final)
- Lab worksheets (weekly) and exams (two).

1. Semester-long “My favorite mammal” Assignment: 25%

Throughout the semester you will work in pairs and be asked to explore the application of concepts and principles to a mammal species and relatives you selected at the start of the semester. This will involve a mix of short PowerPoint presentations (2-3 minutes) given to the class at intervals at the start of lab sessions, and one “pop-up poster” session in the lecture series.

The presentations will be graded by your peers and the TA for content, clarity and presentation.

Late Assignment Policy:

Because assignments will be presented in lab and must be collated by the TA ahead of the lab there are severe penalties for late submissions.

Submission time	Total possible percentage for the presentation
By due time and date	100%
First 24 hours after due time and date	50%
Between 24-48 hours after due time and date	40%
Between 48-72 hours	30%
72 hours after due time and date	0

Exceptions will only be made in the event of a satisfactory, written excuse (e.g. doctor’s note or UI-sanctioned absence) that covers the entire week of the assignment availability.

2. Labs Worksheets and Exams: 25%

Please attend your assigned lab section. Labs will consist of learning mammalian characteristics, mammalian orders, families and species. Presentations of the Discovering Mammals assignments will also be made in lab, with about 6 groups presenting each week. In general, the lab format will be: Discovering Mammals presentations; review of worksheets from the preceding week; presentation about the focal group of the week; students work through the collections with the aid of a worksheet. Lab worksheets must be completed during the lab and turned in before leaving for grading. They will be returned at the start of the next lab for review.

Lab exams take place during normal lab times.

3. In Class Exams: 50%

- Midterm I: 10%
- Midterm II: 15%
- Final: 25%.

Summary of Grading

Instructional Activity	Occurrences	Point Value	Total Points	Drops	Percentage final grade
Assignments – Discovering Mammals	6	40	240	1	25%
Lab Worksheets	11	10	110	2	5%
Lab Exam I	1	TBD	TBD	0	10%
Lab Exam II	1	TBD	TBD	0	10%
Midterm I	1	TBD	TBD	0	10%
Midterm II	1	TBD	TBD	0	15%
Final	1	TBD	TBD	0	25%
Total					100%

You may drop your lowest assignment and two lab worksheets. Please note that I do this to accommodate student absences. I expect students to be in class and lab. I understand that students get sick, attend conferences, do field work, and have time sensitive experiments. These drops are intended to cover these types of issues. There will be one opportunity to review lab material before each lab exam if you missed a lab. Please do not ask me for extensions to these activities. Of course, if you get extremely sick, then we can make arrangements

GRADES

Letter grades will be determined based on your percentage scores as follows:

- A: 89-100%
- B: 78-88%
- C: 67-77%
- D: 56-66%
- F: < 56%

Course Outline & Schedule

I reserve the right to make reasonable modifications to this outline.

Date	Lecture Topics	Lab Topics	Assignments Presentations in Lab
	MODULE 1 - Introduction, diversity and evolution		
26-Aug	Introduction – mammalian ecology in a changing world		
28-Aug	Diversity of living mammals & why we study them.	Discovering Mammals	
2-Sep	Origins and evolution of mammals		
4-Sep	Mammalian radiations	Mammal Characteristics I	Assignment 1
	MODULE 2 - Ecology of vulnerability to anthropogenic disturbance.		
9-Sep	Conservation status of mammals -- the IUCN Red List		
11-Sep	Physiological adaptations and ecology	Mammal Characteristics II	Assignment 1
16-Sep	Sensory ecology, communication, and social behavior		
18-Sep	Sensory ecology, communication, and social behavior	Monotremes and Marsupials	Assignment 2
23-Sep	Locomotion, landscape and movement ecology		
25-Sep	Locomotion, landscape and movement ecology	Afrotheria & Xenartha	Assignment 2
30-Sep	MIDTERM I		
	MODULE 3 - Reproduction, life history strategies, and population growth -- pest or perishing?		
2-Oct	Reproduction, sexual selection, parental care & mating systems	Eulipotyphyla	
7-Oct	Reproduction, sexual selection, parental care & mating systems		
9-Oct	Life History strategies and population ecology	Carnivora & Pholidota	
14-Oct	Life History strategies and population ecology		
16-Oct	The perils of small populations	LAB EXAM I	Assignment 3
21-Oct	The perils of small populations		

Date	Lecture Topics	Lab Topics	Assignments Presentations in Lab
	MODULE 4 - Disruption and recovery of the functional roles of mammals in ecosystems		
23-Oct	Ecosystem services & disservices	Perissodactyla & Artiodactyla	Assignment 3
28-Oct	Trophic cascades and ecosystem function		
30-Oct	Ecosystem engineers	Chiroptera	Assignment 4
4-Nov	MIDTERM II		
	MODULE 5 - Disease ecology -- anthropogenic drivers of spillover		
6-Nov	Mammalian zoonoses overview and diseases of wild mammals	Scandentia, Dermoptera, Primates	Assignment 4
11-Nov	Spillover of diseases to wild mammals (pathogen pollution)		
13-Nov	Spillover of disease from wild mammals (emerging infectious diseases)	Lagomorphs and Rodents Part I	
18-Nov	In-class Assignment 5 (pop-up poster presentations)		
	MODULE 6 - Conservation ecology -- sustainable mammal diversity in a changing world		
20-Nov	From species to landscapes to communities.	Rodents Part II	Assignment 6
	Thanksgiving		
2-Dec	From species to landscapes to communities.		
4-Dec	From species to landscapes to communities.	LAB EXAM II	Assignment 6
9-Dec	Overrun/Review		
12-Dec	FINAL 8-11.00 am		

Course operations in Canvas

Outside of the classroom and lab, the course will operate within Canvas.

Announcements: All information relevant to the course will be posted on the Announcement Topic. You are responsible for checking this, do so regularly! I usually email out to students as well, so watch your UI email.

Communication: **All email correspondence with Dr Kingston must be conducted within the Canvas course email.** Emails will be answered within 24 hours Mo-Friday. I will NOT respond to emails sent to my UI email. Emails sent to students from myself cannot be forwarded to other email accounts.

PDFs of Lectures: The PowerPoints of most lectures will be available in Canvas as pdfs. Versions are provided before class and include blank slides and sections that will be completed during class. You are responsible for this additional material generated during class and encouraged to annotate pdfs electronically or take physical notes that align with slides and activities.

Course Policies

Lab Policy: Use of smart phones is prohibited during assignment presentations presentation at the beginning of labs and for the first 30 minutes of self-paced time intended for working through the stations. After that, phones can be used to take photos of specimens to aid in studying or to research material relevant to the lab topics.

Attendance: I expect students to attend all lectures and labs. There will be no make-ups for exams other than for documented illnesses or other reasons approved beforehand by the course instructor or TA. Two drops for lab worksheets and one Discovering Mammals assignment are provided to accommodate absences.

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Academic Integrity

The University of Illinois Urbana-Champaign Student Code should also be considered as a part of the syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>.

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: <https://studentcode.illinois.edu/article1/part4/1-401/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

ATTENTION!!

If I find evidence of **plagiarism** or use of **Artificial Intelligence** in materials submitted by students, or other violations of the community standards outlined in the Student Code, **I will assign a Grade F for the entire course and immediately report the incident to the Office for Student Conflict Resolution**

Use of AI Language Models

You may use AI tools to look up definitions of terms and phrases that you do not understand (but beware, answers are not always correct). You **may not use generative AI tools (such as ChatGPT) to generate content for any assignments.** Assignment content derived from the use of AI tools in this class may be considered a violation of the University of Illinois' Academic Integrity policy and the Student Code since the work is not your own. Students may be required to verify content originality through oral examination.

Statement of Inclusion

Everybody has a right to study science regardless of sex, sexual orientation, gender, nationality, race, or disability status. We will not tolerate people creating a hostile learning environment for others. The study of mammals encompasses a great array of domains within biology, but diversity of the people studying mammals has historically been very low. It is my hope and intent to create an inclusive environment such that all students can flourish and succeed and come to appreciate and enjoy studying the extraordinary world of mammals.

Accommodations

The University of Illinois Champaign-Urbana, is committed to ensuring that all students, including students with disabilities, do not experience barriers to learning and participating fully in class. Students who have a letter of accommodation from DRES are advised to share that with instructors as soon as possible to ensure accommodation needs can be discussed and met.

To obtain disability-related academic adjustments and/or auxiliary aids, students should contact both the instructor and the Disability Resources and Educational Services (DRES) as soon as possible. You can contact DRES at 1207 S. Oak Street, Champaign, IL 61820, (217) 333-1970, or via email at disability@illinois.edu.

Religious Observances

It is the policy of the University of Illinois Urbana-Champaign to reasonably accommodate its students' religious beliefs, observances, and practices that conflict with a student's class attendance or participation in a scheduled examination or work requirement, consistent with state and federal law. Students must make requests for accommodation in advance of the conflict to allow time for both consideration of the request and alternate procedures to be prepared. Requests should be directed to the instructor. The Office of the Dean of Students provides an optional resource on its [website](#) to assist students in making such requests.

Disruptive Behavior

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution

of the problem and may be reported to the Office for Student Conflict Resolution (<https://conflictresolution.illinois.edu>; conflictresolution@illinois.edu; 333-3680) for disciplinary action.

Mental Health

Significant stress, mood changes, excessive worry, substance/alcohol misuse or interferences in eating or sleep can have an impact on academic performance, social development, and emotional wellbeing. The University of Illinois offers a variety of confidential services including individual and group counseling, crisis intervention, psychiatric services, and specialized screenings which are covered through the Health Service Fee. If you or someone you know experiences any of the above mental health concerns, it is strongly encouraged to contact or visit any of the University's resources provided below. Getting help is a smart and courageous thing to do for yourself and for those who care about you.

- Counseling Center (217) 333-3704
- McKinley Health Center (217) 333-2700
- National Suicide Prevention Lifeline (800) 273-8255
- Rosecrance Crisis Line (217) 359-4141 (available 24/7, 365 days a year)

If you are in immediate danger, call 911.

Community of Care

As members of the Illinois community, we each have a responsibility to express care and concern for one another. If you come across a classmate whose behavior concerns you, whether in regard to their well-being or yours, we encourage you to refer this behavior to the Connie Frank CARE Center (formerly the Student Assistance Center) in the Office of the Dean of Students. You may do so by calling 217-333-0050 or by submitting an [online referral](#). Based on your report, staff in the Connie Frank CARE Center will reach out to offer support and assistance.

Further, as a Community of Care, we want to support you in your overall wellness. We know that students sometimes face challenges that can impact academic performance (examples include mental health concerns, food insecurity, homelessness, personal emergencies). Should you find that you are managing such a challenge and that it is interfering with your coursework, you are encouraged to contact the [Connie Frank CARE Center](#) (formerly the Student Assistance Center) in the Office of the Dean of Students for support and referrals to campus and/or community resources.

Emergency Response Recommendations

Emergency response recommendations and campus building floor plans can be found at the following website: <https://police.illinois.edu/em/run-hide-fight/>. I encourage you to review this website within the first 10 days of class.

Sexual Misconduct Reporting Obligation

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX Office. In turn, an individual with the Title IX Office will provide information about rights and options, including supportive measures, resources, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: wecare.illinois.edu/resources/students/#confidential. Other information about resources and reporting is available here: wecare.illinois.edu.