MAMMALIAN ECOLOGY AND EVOLUTION

BIOL 4057-001, 5057-001
Fall 2022 Syllabus

COURSE INSTRUCTOR

Dr. Jaime E. Jiménez, *Wildlife Ecologist*, UNT, Department of Biological Sciences, ENV 310V. e-mail: Jaime.Jimenez@unt.edu (*My Web Site*; *Faculty Information*; *Google Citations*; *ResearchGate*)

Invited Lecturers:
Dr. Richard S. Ostfeldt, *Disease Ecologist*, Cary Institute of Ecosystem Studies, NY. ostfeldr@caryinstitute.org *Dr. Ostfeld's Web*; *Google Citations*; *ResearchGate*
Dr. Ramiro D. Crego, *Ecologist*, Smithsonian Institution, D.C. ramirocrego84@gmail.com *Ramiro's Web*; *Google Citations*; *ResearchGate*
Dr. Douglas A. Kelt, *Terrestrial Ecologist (Past president ASM)*, Dept. Wildlife, Fish & Conservation Biology, University of California at Davis. dakelt@ucdavis.edu. *Dr. Kelt's Web*; *Google Scholar Publications*

GENERAL COURSE INFORMATION

Course Catalogue Information: BIOL 4057-001, BIOL 5057-001

Class Schedule: Fall semester. Tuesdays and Thursdays, 8:00-9:20 AM (Central Daylight/Standard Time). ***Taught face-to-face***.

Office Hours: In-person on Tuesdays and Thursdays from 9:30 to 10:30 AM (in my office: ENV 310V) or by appointment through Zoom (please contact me at Jaime.Jimenez@unt.edu).

Attendance, Participation and Students Responsibilities: Attendance is mandatory unless you are experiencing COVID-19 related symptoms, have tested positively for COVID-19 (regardless of whether or not you are exhibiting symptoms), or are in quarantine for COVID-19. Regular and punctual class attendance is expected. If you arrive late, please join the class with the less disturbance. Class attendance will always be taken. If you will not be able to attend a class, discuss this ahead of time with the instructor.

Students are responsible to prepare ahead of time, attend ***all*** lectures and discussion sessions, ask questions, and express themselves creatively and concisely in their work. Ways of earning points for class participation include being prepared to contribute positively to class discussion of the assigned readings. Contributing positively requires having read, as thoroughly as possible, understood the assigned readings, and at least being able to raise important questions if not provide definitive answers. Undergraduate students are responsible for all required readings, and graduate students are responsible for required and some supplementary readings.

If students miss a scheduled graded activity having no valid reason, a grade of zero (0) will be awarded for that examination. Authorized absences that will be considered on a case-by-case basis include religious holidays, call to active military duty, and a certified sickness by a medical professional. No exceptions will be made. Unauthorized absences will affect participation grade. Students who have a valid reason for missing an exam may PRE-ARRANGE (prior to the exam) with the instructor a time for taking the make-up exam. The instructor has the option of choosing a different test format for the make-up exams.

Cell phones will not be accepted in classes or tests. Be respectful with others, turn cell phones off and put them away prior to class. Any other wireless communication devices must be turned off or set to silent mode during class time.

ACADEMIC CONDUCT AND INTELLECTUAL PROPERTY

Class Materials: Students will have access to the class material posted online in Canvas. This information is an intellectual property of UNT or the instructor and is intended only for the use by the students in this course. Thus, it should not be used otherwise in any form. This would be a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Academic Dishonesty Policy: Students are responsible for reading, understanding, and knowing UNT's Academic Dishonesty Policy that can be found here. Academic dishonesty in this class is unacceptable and will not be tolerated in any form.

SAFETY AND ACCESSIBILITY

Disability Accommodation: The Department of Biological Sciences in cooperation with the Office of Disability Accommodation, comply with the Americans with disabilities in making reasonable accommodations for qualified students with disabilities. The University of North Texas is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112– The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. Please present your written accommodation request before the 12th class day. See also here.

Drop/Withdrawal Information: Last day to drop without professor's approval is before September 12th, 2022. Other Drop/Withdrawal Information and other important Academic Dates can be found here. Before dropping the course, please come and discuss this with me.

MAMMALIAN ECOLOGY AND EVOLUTION

Course Description:
This course will expose students to the diverse Mammalian Class in a lecture-style format. Hands-on experience will be gained through the Mammalogy Lab (BIOL 4057-301, BIOL 5057-301). Emphasis will be on diversity, ecological roles, evolution, conservation, and the importance of mammals in human cultures. Additionally, students will learn about contemporary mammalian research techniques. There will be quizzes on required class readings/videos. Students are expected to participate actively in the course by presenting selected topics and being part of class discussions. Each student will pick a topic on which he/she will write an essay. Class grades will be determined by each student's performance in the previously described activities, three major exams, a presentation, and an essay.

Course materials will be made available online through Canvas. Students are required to check Canvas regularly for updates to the syllabus, announcements, and access to course materials.

Course Goals:
Through lectures, readings, videos, seminars and class discussions, students will develop:

- Familiarity with mammalian diversity, evolution, and ecology.
- A basic understanding of the importance of Recent mammals to world ecosystems and humans.
- Skills in academic discussions on mammalian research.
- Familiarity with mammalian case studies, recent relevant literature, and biogeography.
- An understanding of issues in mammalian conservation, research techniques, and impacts on human economies.

Readings:
Required text:

- Vaughan, T.A., J.M. Ryan, and N.J. Czaplewski. 2015. *Mammalogy*. 6th ed. Jones & Bartlett Publishers. Sudbury, Massachusetts. Available through the library as a hard copy here and as an online copy here.
  OR
- Feldhamer, G.A., J.F. Merritt, C. Krajewski, J.L. Rachlow & K.M. Stewart. 2020. *Mammalogy*. 5th ed. Johns Hopkins University Press, Baltimore, Maryland. Print copy available through the library here.

Complementary readings:

- Eisenberg, J.F. 1983. *The mammalian radiations, an analysis of trends in evolution, adaptation and behavior*. University of Chicago Press, Chicago, Illinois. Book available here.
- Kelt, D.A. and J.L. Patton. 2020. *A manual of the mammalia*. University of Chicago Press, Chicago, IL.
- Macdonald, D.W. 2009. *The Princeton encyclopedia of mammals*. Princeton University Press, Princeton. Available online here.

- Martin, R.E., R.H. Pine, and A.F. DeBlase. 2011. *A manual of mammalogy: with keys to families of the world*. 3rd ed. Waveland Press, Long Grove, Illinois. Hard copy available here.
- Nowak, R.M. 2018. *Walker's mammals of the world*. 1st on-line ed. Johns Hopkins University Press. Baltimore, Maryland. Available online through the library here.
- Schmidly, D.J. 2004. *The mammals of Texas*. 6th ed. University of Texas Press, Austin. Printed copy here.
- Wilson, D.E. and R.A. Mittermeier (eds.). 2009. *Handbook of the mammals of the world*. Vols. 1-9. Lynx Edicions, Barcelona.
- Wilson, D.E., F.R. Cole, J.D. Nichols, R. Rudran, and M.S. Foster. 1996. *Measuring and monitoring biological diversity. Standard methods for mammals*. Smithsonian Institution Press, Washington, D.C. Printed copy here.

Course Evaluation:

1) Tests: First Exam: 15%, Second Exam: 15%, and Final Exam: 15%. Exams will cover all material presented in classes, including lectures, videos, paper presentations, and discussions. Exams will not be comprehensive. Graduate students will be given additional questions on each exam.

2) Quizzes: 15%. At the end of each video show, a short quiz regarding the contents of the video shown will be taken.

3) Essay or Paper: 15%. Students will review the literature on a recent topic of mammalian biology, synthesize it, discuss findings, and provide a final section with a personal view or opinion. The document should be original and written in an essay or paper style format (Journal of Mammalogy is suggested), having a maximum of 3 pages for undergraduates and 6 pages for graduates, formatted as double space, font size 12, Times New Roman, and 1-inch margins (not including bibliography – 1 to 3 additional pages). Chose a Title. In the Introduction provide the context and justify the subject; next, under Methods explain where you obtained the information from. Afterwards, develop your narrative and finish it with your personal thoughts on the subject. Finally, list the Literature Used.

The topics should be chosen by September the 22nd and the final document should be turned in on December the 1st; no exceptions will be made for this deadline. Students are encouraged to discuss their writing progress with the instructor ahead of time.

4) Paper presentations: 15%. Students will choose 1 paper from recent scientific literature (i.e., Journal of Mammalogy, Mammalian Biology, Mammal Review, etc.) on any aspect of mammal biology of broad interest. These will be presented to the class in 7 groups of 3 undergraduate students and 2 groups of 2 graduates each. Students are expected to lead and moderate a discussion. Selected papers should be discussed with the instructor at least a week ahead of the presentation day. Please send me a copy of the paper you chose and of your presentation -at least during the day before you present by 4 PM- so that I can make these available through Canvas.

5) Participation: 10%. Students are expected to participate actively in the course and in discussions.

****Be aware that the grades will be weighted-average from the Lecture (75%) and the Lab (25%) at the end of the semester. That means you will receive a single grade for the entire course, but need to approve the Lab and the Lecture to pass.****

The final grade earned will correspond to the following scores, weighted by each activity: **A** = 90 - 100, **B** = 80 - 89, **C** = 70 - 79, **D** = 60 - 69, **F** = 0 - 59.

TENTATIVE COURSE 2022 PROGRAM (subject to change)

DATE	DAY	CLASS	LECTURE TOPICS	SOURCES
30 Aug	Tue	1	Introduction + Syllabus Lecture 1: My Experience Studying Mammals	
01 Sep	Thu	2	Video 1: *A winning design* + Paper Group 1	V1 + Q1: A Winning Design
06 Sep	Tue	3	Lecture 2: Mammalian Characteristics and The Science of Mammalogy	Ch. 3 Vaughan et al. Ch. 1 Feldhamer et al.
08 Sep	Thu	4	Video 2: *Insect hunters* + Paper Group 2	V2 + Q2: Insect Hunters
13 Sep	Tue	5	Lecture 3: Mammalian Origins and Evolution	Ch. 2 Vaughan et al. Ch. 4 Feldhamer et al.
15 Sep	Thu	6	Video 3: *Plant predators* + Paper Group 3	V3 + Q3: Plant Predators
20 Sep	Tue	7	Lecture 4: Modes of Feeding	Ch. 7 Feldhamer et al.
22 Sep	Thu	8	Video 4: *The opportunists* + Paper Group 4	V4 + Q4: The Opportunists
27 Sep	Tue	9	Lecture 5: Mammalian Diversity: Monotremes and Metatheria (Marsupials)	Ch. 5 & 6 Vaughan et al. Ch. 10 Feldhamer et al.
29 Sep	Thu	10	Lecture 6: Dr. Richard Ostfeld (Cary Institute): wildlife diseases.	*TBD*
04 Oct	Tue	11	**First Exam**	
06 Oct	Thu	12	Video 5: *Social climbers* + Paper Group 5	V5 + Q5: Social Climbers
11 Oct	Tue	13	Lecture 7: Eutheria: Xenarthra, Pholidota, Tubulidentata and Chiroptera	Ch. 8, 10 & 15 Vaughan et al. Ch. 11, 13 & 21 Feldhamer et al.
13 Oct	Thu	14	Lecture 8: Afrosoricida, Erinaceomorpha, Soricomorpha, Macroscelidea, Scandentia, Dermoptera	Ch. 8, 11 & 14 Vaughan et al. Ch. 11, 14 & 17 Feldhamer et al.
18 Oct	Tue	15	Video 6: *Meet eaters* + Paper Group 6	V6 + Q6: Meet Eaters

20 Oct	Thu	16	Lecture 9: Primates and Carnivora	Ch. 12 & 16 Vaughan et al. Ch. 15 & 18 Feldhamer et al.
25 Oct	Tue	17	Video 7: *Chisellers* + Paper Group 7	V7 + Q7: Chisellers
27 Oct	Thu	18	Lecture 10: Rodentia and Lagomorpha	Ch. 13 Vaughan et al. Ch. 16 Feldhamer et al.
01 Nov	Tue	19	Video 8: *Return to the water* + Paper Group 8	V8 + Q8: Return to the Water
03 Nov	Thu	20	Lecture 11: Sirenia, Proboscidea, Hyracoidea, and Cetacea	Ch. 9 & 19 Vaughan et al. Ch. 12 & 20 Feldhamer et al.
08 Nov	Tue	21	Review & Questions for Second Exam	
10 Nov	Thu	22	**Second Exam**	
15 Nov	Tue	23	Lecture 12: Dr. Ramiro D. Crego (Smithsonian Institution): Studying mammals in two continents: from Patagonia to the African savannas.	*TBD*
17 Nov	Thu	24	Lecture 13: Methods for Studying Mammals	Ch. 2 Feldhamer et al.
22 Nov	Tue	25	Lecture 14: Perissodactyla and Cetartiodactyla	Ch. 17 & 18 Vaughan et al. Ch. 19 Feldhamer et al.
24 Nov	Thu	26	Thanksgiving Break: no classes	
29 Nov	Tue	27	Lecture 15: Zoogeography	Ch. 25 Vaughan et al. Ch. 5 Feldhamer et al.
01 Dec	Thu	28	Lecture 16: Conservation of Mammals	Ch. 26 Vaughan et al. Ch. 28 Feldhamer et al.
06 Dec	Tue	29	Video 9: *Food for thought* + Paper Group 9	V9 + Q9: Food for thought
08 Dec	Thu	30	Lecture 17: Dr. Douglas A. Kelt (U.C. Davis): A long-term study in small mammals: insights on drivers of change	*TBD*
13 Dec	Tue	31	**Final Exam**	