

# MAMMALIAN ECOLOGY AND EVOLUTION

BIOL 4057-001, 5057-001

Fall 2021 Syllabus

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## COURSE INSTRUCTOR

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

### Invited Lecturers:

Dr. Cristóbal Briceño, *Wildlife Ecologist*, Livestock and Veterinary Sciences, Universidad de Chile, Santiago. [cristobal.briceno@uchile.cl](mailto:cristobal.briceno@uchile.cl) [ResearchGate](#)

Dr. Ramiro D. Crego, *Ecologist*, Smithsonian Institution, D.C. [ramirocrego84@gmail.com](mailto: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](mailto:dakelt@ucdavis.edu). [Doug's Web](#); [Google Scholar Publications](#)

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## 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:** By appointment through Zoom (please contact me at [Jaime.Jimenez@unt.edu](mailto:Jaime.Jimenez@unt.edu)) or in-person on Tuesdays and Thursdays from 9:30 to 10:30 AM.

**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.

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## 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.

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## SAFETY AND ACCESSIBILITY

**Face Coverings:** UNT encourages everyone to wear a face-covering when indoors, regardless of vaccination status, to protect themselves and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

**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 12<sup>th</sup> class day. See also [here](#).

**Drop/Withdrawal Information:** Last day to drop without professor's approval is before September 4<sup>th</sup>, 2021. Other Drop/Withdrawal Information and other important Academic Dates can be found [here](#). Before dropping the course, please come and discuss this with me.

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## 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*. 6<sup>th</sup> 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*. 5<sup>th</sup> 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*. 3<sup>rd</sup> ed. Waveland Press, Long Grove, Illinois. Hard copy available [here](#).
- Nowak, R.M. 2018. *Walker's mammals of the world*. 1<sup>st</sup> on-line ed. Johns Hopkins University Press, Baltimore, Maryland. Available online through the library [here](#).
- Schmidly, D.J. 2004. *The mammals of Texas*. 6<sup>th</sup> 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 23<sup>rd</sup> and the final document should be turned in on December the 2<sup>nd</sup>; 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 1 group of 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- 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 2021 PROGRAM (subject to change)***

DATE	DAY	CLASS	LECTURE TOPICS	SOURCES
24 Aug	Tue	1	Introduction + Syllabus Lecture 1: My Experience Studying Mammals	
26 Aug	Thu	2	Video 1: <i>A winning design</i> + Paper Group 1	V1 + Q1: A Winning Design
31 Aug	Tue	3	Lecture 2: Mammalian Characteristics and The Science of Mammalogy	Ch. 3 Vaughan et al. Ch. 1 Feldhamer et al.
02 Sep	Thu	4	Video 2: <i>Insect hunters</i> + Paper Group 2	V2 + Q2: Insect Hunters
07 Sep	Tue	5	Lecture 3: Mammalian Origins and Evolution	Ch. 2 Vaughan et al. Ch. 4 Feldhamer et al.
9 Sep	Thu	6	Video 3: <i>Plant predators</i> + Paper Group 3	V3 + Q3: Plant Predators
14 Sep	Tue	7	Lecture 4: Modes of Feeding	Ch. 7 Feldhamer et al.
16 Sep	Thu	8	Video 4: <i>The opportunists</i> + Paper Group 4	V4 + Q4: The Opportunists
21 Sep	Tue	9	Lecture 5: Mammalian Diversity: Monotremes and Metatheria (Marsupials)	Ch. 5 & 6 Vaughan et al. Ch. 10 Feldhamer et al.
23 Sep	Thu	10	Lecture 6: Dr. Cristóbal Briceño (Universidad de Chile): Conservation, genetics and diseases.	Berger, J., T. Wangchuk, C. Briceno, A. Vila & J.E. Lambert. 2020. Disassembled Food Webs and Messy Projections: Modern Ungulate Communities in the Face of Unabating Human Population Growth. <i>Frontiers in Ecology and Evolution</i> 8 <a href="https://doi.org/10.3389/fevo.2020.00128">10.3389/fevo.2020.00128</a>
28 Sep	Tue	11	<b>First Exam</b>	
30 Sep	Thu	12	Video 5: <i>Social climbers</i> + Paper Group 5	V5 + Q5: Social Climbers
05 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.
07 Oct	Thu	14	Lecture 8: Afrosoricida, Erinaceomorpha, Soricomorpha, Macroscelidea, Scandentia, Dermoptera	Ch. 8, 11 & 14 Vaughan et al. Ch. 11 & 14 Feldhamer et al.

12 Oct	Tue	15	Video 6: <i>Meet eaters</i> + Paper Group 6	V6 + Q6: Meet Eaters
14 Oct	Thu	16	Lecture 9: Primates and Carnivora	Ch. 12 & 16 Vaughan et al. Ch. 15 & 18 Feldhamer et al.
19 Oct	Tue	17	Video 7: <i>Chisellers</i> + Paper Group 7	V7 + Q7: Chisellers
21 Oct	Thu	18	Lecture 10: Rodentia and Lagomorpha	Ch. 13 Vaughan et al. Ch. 16 Feldhamer et al.
26 Oct	Tue	19	Video 8: <i>Return to the water</i> + Paper Group 8	V8 + Q8: Return to the Water
28 Oct	Thu	20	Lecture 11: Sirenia, Proboscidea, Hyracoidea, and Cetacea	Ch. 9 & 19 Vaughan et al. Ch. 12 & 20 Feldhamer et al.
02 Nov	Tue	21	Lecture 12 + Review Questions Second Exam	
04 Nov	Thu	22	<b>Second Exam</b>	
9 Nov	Tue	23	Lecture 13: Dr. Ramiro D. Crego (Smithsonian Institution): Studying mammals in two continents: from Patagonia to the African savannas.	Crego, R.D., J.O. Ogutu, H.B.M. Wells, G.O. Ojwang, D.J. Martins, P. Leimgruber & J.A. Stabach. 2020. Spatiotemporal dynamics of wild herbivore species richness and occupancy across a savannah rangeland: Implications for conservation. <i>Biological Conservation</i> . <a href="https://doi.org/10.1016/j.biocon.2020.108436">https://doi.org/10.1016/j.biocon.2020.108436</a>
11 Nov	Thu	24	Lecture 14: Methods for Studying Mammals	Ch. 2 Feldhamer et al.
16 Nov	Tue	25	Lecture 15: Perissodactyla and Cetartiodactyla	Ch. 17 & 18 Vaughan et al. Ch. 19 Feldhamer et al.
18 Nov	Thu	26	Lecture 16: Dr. Douglas A. Kelt (U.C. Davis): Studying mammals in the Americas.	Kelt et al. TBD
23 Nov	Tue	27	Lecture 17: Zoogeography	Ch. 25 Vaughan et al. Ch. 5 Feldhamer et al.
25 Nov	Thu	28	Thanksgiving Break: no classes	
30 Nov	Tue	29	Video 9: <i>Food for thought</i> + Paper Group 9	V8 + Q9: Food for thought
02 Dec	Thu	30	Lecture 18: Conservation of Mammals	Ch. 26 Vaughan et al. Ch. 28 Feldhamer et al.
07 Dec	Tue	31	<b>Final Exam</b>	