

Mammalogy (Biology 483) Fall, 2023 - Syllabus

Professor: Dr. Jack Sullivan Office: LSS 345 e-mail: jacks@uidaho.edu
Phone: (W) 885-9049

Office Hours: Tuesdays after lecture (10:30-11:30); Wednesdays from 9:30-10:30.

Research Interests: Hybridization and speciation; Theoretical phylogenetics; Molecular evolution, Comparative phylogeography; Rodent systematics; Conservation genetics.

TA: Luxien Landruth Office: LSS 352 e-mail: [llandrus@uidaho.edu](mailto:lilandrus@uidaho.edu)

There is no required text.

Supplemental Text: Feldhamer et al. 2017. *Mammalogy: Adaptation, Diversity, and Ecology*, 5th edition. McGraw-Hill.

Lab Supplement: Jones, J. K., and R. W. Manning. Illustrated Key to Skulls of Genera of North American Land Mammals.

Internet Resources:

<http://www.webpages.uidaho.edu/~jacks/Mammalogy.html> – This site will have all my lecture notes (with links to primary literature), labs, and old exams posted. In addition, I'll post links to recorded lectures here. The lecture notes are the exact notes from which I will lecture, and I will try to have them posted before the relevant class period. Please remember that these are unedited notes, and therefore may contain typos. Also, please see my policy with respect to attendance while we're still dealing with the Covid pandemic. I find Canvas to be very clunky. Therefore, I'll only use that for posting grades, and this is the site where I'll post all educational materials.

<https://digitalatlas.cose.isu.edu/bio/mammal/mamfram.htm> - This is the mammal section of the digital atlas of Idaho. It has information on field identification, distribution, habitat, and habits for almost all mammal species in Idaho. However, its taxonomy is out of date.

<https://idfg.idaho.gov/species/taxa/explore?category=49> – This is the IF&G list of mammals that occur in Idaho. There are observation records and a bit of natural history.

<https://animaldiversity.org/site/accounts/information/Mammalia.html> – This is an *amazing* source of information made available through the University of Michigan Museum of Zoology. Information available includes detailed photographs of skeletal anatomy (including rotating skulls), life history data from many species, notes on conservation of many species, etc. For lab 1, you'll particularly appreciate:
https://animaldiversity.org/accounts/Canis_lupus/specimens/collections/contributors/anatomical_images/dog_skull/dog_lateral/ and associate pages.

<http://www.departments.bucknell.edu/biology/resources/msw3/browse.asp> - On-line version of *Mammal Species of the World*, 3rd Ed. This is the latest (2005) checklist of all mammalian species, by Don Wilson and DeeAnn Reeder. There's a 4th edition, but it's not available on-line.

<http://1kai.dokkyomed.ac.jp/mammal/en/mammal.html> - This site has excellent photographs of many mammal crania.

Prerequisite: Biol 114, Biol 115

Attendance in the Post Covid-19 World: UI no longer requires face coverings to be worn while inside campus buildings. However, there is still lots of virus circulating in our community and this may continue to be the case throughout the fall. This classroom isn't sufficiently large for us to provide spacing and I care a great deal about your well-being. Therefore, if you're unvaccinated, immune compromised, or in any other way uncomfortable being around large groups, you may use the options I'm providing for you to make your own choices (i.e., Zooming into lectures either synchronously or via the links to recorded lectures).

Objectives (Learning Outcomes): This course has two major goals. The first is to provide you with a conceptual understanding of many aspects of mammalian biology. Because this will require a foundation of factual knowledge to build upon, the second goal is to provide a detailed understanding of mammalian anatomy, diversity, and natural history (especially of local forms), as well as some of the techniques that mammalogists use to acquire such knowledge. These two goals will be addressed in lecture and lab respectively, and to the greatest extent possible, I've organized the schedule to facilitate the integration of lab with the lectures.

Note 1: This course will be taught very much from an evolutionary perspective, for three reasons.

First, descent with modification leading to diversification is the only scientifically justifiable explanation for the origin of current biological diversity, including mammalian diversity. This position is consistent with that of the American Association for the Advancement of Science (<http://www.project2061.org/publications/guides/evolution.pdf>) and the National Academy of Sciences (<https://www.nationalacademies.org/evolution/evolution-and-society>).

Second, descent with modification is as unifying in biology as the concept of an ancient Earth is unifying in geology. The entire science of biology is the study of the contemporary products of evolutionary processes.

Third, an evolutionary perspective provides an amazingly convenient framework for organizing factual knowledge.

Note 2: University policy with respect to firearms has been expressed in the following two statements (<https://www.uidaho.edu/infrastructure/pss/firearms-on-campus>):

"The University of Idaho bans firearms from its property with only limited exceptions. One exception applies to persons who hold a valid Idaho enhanced concealed carry license, provided those firearms remain concealed at all times. If an enhanced concealed carry license holder's firearm is displayed, other than in necessary self-defense, it is a violation of University policy. Please contact local law enforcement (call 911) to report firearms on University property."

Make-up Policy: Make-up exams will be given only for the first three lecture exams, and for those, only if I have been contacted prior to the time of the exam. A missed lab quiz will not be made up.

Disability Support Services and Accommodations Statement: University of Idaho is committed to ensuring an accessible learning environment where course or instructional content are usable by all students and faculty. If you believe that you require disability-related academic adjustments for this class (including pregnancy-related disabilities), please contact Center for Disability Access and Resources (CDAR) to discuss eligibility. A current accommodation letter from CDAR is required before any modifications, above and beyond what is otherwise available for all other students in this class will be provided. Please be advised that disability-related academic adjustments are not retroactive. CDAR is located at the Bruce Pitman Building, Suite 127. Phone is 208-885-6307 and e-mail is cdar@uidaho.edu. For a complete listing of services and current business hours visit <https://www.uidaho.edu/current-students/cdar> or call 208-885-6307.

Tutoring and College Success (TCS): TCS offers three distinct services dedicated to student success: tutoring, SI-PASS, and Academic Coaching. Vandal Tutoring provides drop-in style tutoring in person at the Library or online through uidaho.edu/tutoringonline at no cost to undergraduates. SI-PASS provides peer assisted study sessions for difficult courses. You can find the schedule of currently supported courses at uidaho.edu/si. Academic Coaching offers students an opportunity to work with a coach, one on one, to improve their academic skills such as: effective studying, test taking, time management, and note taking. Visit uidaho.edu/academic-coaching to schedule an appointment.

T.A. Responsibilities: The TA will be responsible for all aspects of lab quizzes, will give most lab lectures, will grade lab reports, and grade the lab practical. In addition, one will be present in lab during the sessions.

Grading: Final grades will be assigned based on points accumulated. These points will come from the following:

Lecture:

Exam I (September 19)	100 pts.
Exam II (October 19)	100 pts.
Exam III (November 16)	100 pts.
Final Exam (Due on December 14)	50 pts.

Laboratory:

Quizzes – 8 quizzes for 10 points each*	80 pts.
Lab Exam I** (10/10 or 10/11)	70 pts.
Lab Final (12/05 or 12/06)	80 pts.

Total 580 pts.

Note that lab quizzes will usually be given at the beginning of the subsequent lab period. If you are in the Tuesday lab section, you must take each quiz and exam on the appropriate Tuesday; if you're in the Wednesday section, you must take each quiz and exam on the appropriate Wednesday.

*I will drop your lowest quiz score and double your highest quiz score.

**If your score on the Lab Final is higher than your score on the Lab Midterm, I will adjust the Midterm score up accordingly.

Lecture Schedule

Week	Date	Lecture Topic
I	22 Aug. 24 Aug.	Introduction, Characteristics of Mammals Mammalian Characters/Origin of Mammals
II	29 Aug. 31 Aug.	Origin of Mammals Origin of Mammals/Mammal Diversity
III	05 Sept. 07 Sept.	Mammal Diversity: Early Lineages/Monotremes Mammal Diversity: Metatherians
IV	12 Sept. 14 Sept.	Mammal Diversity: Eutherians Mammal Diversity: Eutherians
V	19 Sept. 21 Sept.	Exam 1 Disparity in Diversity
VI	26 Sept. 28 Sept.	Dentition & Feeding Species Concepts in Mammals
VII	03 Oct. 05 Oct.	Evolution of Ear Ossicles Locomotion I: Flight
VIII	10 Oct. 12 Oct.	Locomotion II: Functional Morphology Locomotion III: Terrestrial & Aquatic
IX	17 Oct. 19 Oct.	Locomotion III: Terrestrial & Aquatic Exam 2
X	24 Oct. 26 Oct.	Reproduction I: General Patterns Reproduction II: Adaptations
XI	31 Oct. 02 Nov.	Reproduction II: Adaptations Social Behavior
XII	07 Nov. 09 Nov.	Social Behavior Population Cycles
XIII	14 Nov. 16 Nov.	Population Cycles Exam 3
XIV	Fall Recess	
XV	28 Nov. 30 Dec.	Population Genetics Conservation & Genetics
XVI	05 Dec. 07 Dec.	Thermoregulation/Water Balance Thermoregulation/Water Balance

Lab Schedule

Week	Dates	Lab Topic
I	8/22, 8/23	No Labs
II	8/29, 8/30	Lab 1: Mammalian Anatomy – Quiz on 9/12 or 9/13
III	9/05, 9/06	Review Mammalian Anatomy
IV	9/12, 9/13	Lab 2: Mammal Diversity: Monotremata, Metatheria, Xenarthra, & Afrotheria, Insectivora (Eulipotyphla) – Quiz on 9/19 or 9/20
V	9/19, 9/20	Lab 3: Mammal Diversity: Chiroptera, – Quiz on 9/26 or 9/27
VI	9/26, 9/27	Lab 4: Mammal Diversity: Rodentia I – Quiz on 10/2 or 10/3
VII	10/2, 10/3	Review for Lab Midterm
VIII	10/10, 10/11	Lab Midterm
IX	10/17, 10/18	Lab 5: Mammal Diversity: Rodentia II – Quiz on 10/24 or 10/25
X	10/24, 10/25	Lab 6: Mammal Diversity: Lagomorpha, Primates, Scandentia & Dermoptera – Quiz on 10/31 or 11/01
XI	10/31, 11/01	Lab 7: Mammal Diversity: Carnivora & Pholidota – Quiz on 11/07 or 11/08
XII	11/07, 11/08	Lab 8: Mammal Diversity: Perissodactyla & Cetartiodactyla Quiz on 11/14 or 11/15
XIII	11/14, 11/15	Review for Lab Final
XIV	11/21, 11/22	No Labs (Fall Recess)
XV	11/28, 11/29	Review for Lab Final
XVI	12/05, 12/06	Lab Final
