

Mammalogy (Biology 483) Fall, 2020 - 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: Theoretical systematics; Rodent systematics; Hybridization and speciation; Molecular evolution, Comparative phylogeography; Conservation genetics.

TA: Malia Santos Office: LSS 343 e-mail: sant0556@vandals.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. 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. **In order to do well, however, you will need to attend class.** Please remember that I am under no obligation to provide these, that these are unedited notes, and therefore may contain typos.

<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 However, its taxonomy is out of date.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.

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

Prerequisite: Biol 114, Biol 115

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 (<http://www.nationalacademies.org/evolution/Intro.html>).

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."

"University of Idaho leadership remains committed to maintaining a safe work, living and learning environment on campus. We will not tolerate any threatening use of firearms or any other weapons. While authorized license holders may have familiarity and be at ease carrying a loaded firearm, we ask that they be aware that many people are not familiar with handguns and are uncomfortable in their presence."

Make-up Policy: Make-up exams will be given only for the first two 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, and University policy prohibits students from taking the final exam at any time other than the regularly scheduled time (Wednesday, Dec. 16th; 8:00-10:00).

Late Assignments: Five points will be deducted for every day that an assignment is late.

Disability Support Services Reasonable Accommodations Statement Students with disabilities who need accommodations to participate fully in this class should contact Center for Disability Access and Resources (CDAR). All accommodations must be approved through CDAR prior to being implemented. To learn more about the accommodation process, visit CDAR's website at www.uidaho.edu/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 22)	100 pts.
Exam II (October 22)	100 pts.
Exam III (November 19)	100 pts.
Final Exam (December 16)	50 pts.

Laboratory:

Quizzes – 8 quizzes for 10 points each*	80 pts.
Lab Exam I** (10/22 or 10/23)	70 pts.
Lab Final (12/10 or 12/11)	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	25 Aug. 27 Aug.	Introduction, Characteristics of Mammals Mammalian Characters/Origin of Mammals
II	01 Sept. 03 Sept.	Origin of Mammals Origin of Mammals/Mammal Diversity
III	08 Sept. 10 Sept.	Mammal Diversity: Early Lineages/Monotremes Mammal Diversity: Metatherians
IV	15 Sept. 17 Sept.	Mammal Diversity: Eutherians Mammal Diversity: Eutherians
V	22 Sept. 24 Sept.	Exam 1 Disparity in Diversity
VI	29 Sept. 01 Oct.	Dentition & Feeding Species Concepts in Mammals
VII	06 Oct. 08 Oct.	Evolution of Ear Ossicles Locomotion I: Flight
VIII	13 Oct. 15 Oct.	Locomotion II: Functional Morphology Locomotion III: Terrestrial & Aquatic
IX	20 Oct. 22 Oct.	Locomotion III: Terrestrial & Aquatic Exam 2
X	27 Oct. 29 Oct.	Reproduction I: General Patterns Reproduction II: Adaptations
XI	03 Nov. 05 Nov.	Reproduction II: Adaptations Social Behavior
XII	10 Nov. 12 Nov.	Social Behavior Population Cycles
XIII	17 Nov. 19 Nov.	Population Cycles Exam 3
XIV	Fall Recess	
XV	01 Dec.* 03 Dec.*	Population Genetics Conservation & Genetics
XVI	10 Dec.* 12 Dec.*	Thermoregulation/Water Balance Thermoregulation/Water Balance

*These lectures will be delivered on-line, via Zoom.

Lecture Schedule

Week	Dates	Lab Topic
I	8/25, 8/26	Lab 1: Mammalian Anatomy – Quiz on 9/8 or 9/9
II	9/1, 9/2	Lab 2: Mammal Anatomy: Review
III	9/8, 9/9	Lab 3: Mammal Diversity: Monotremata, Metatheria, Xenarthra, & Insectivora – Quiz on 9/15 or 9/16
IV	9/15, 9/16	Lab 4: Mammal Diversity: Chiroptera, Primates, Scandentia & Dermoptera – Quiz on 9/22 or 9/23
V	9/22, 9/23	Lab 5: Mammal Diversity: Rodentia I – Quiz on 9/29 or 9/30
VI	9/29, 9/30	Review for Practical 1
VII	10/6, 10/7	Lab Exam I
VIII	10/13, 10/14	Lab 6: Mammal Diversity: Rodentia II – Quiz on 10/20 or 10/21
IX	10/20, 10/21	Lab 7: Mammal Diversity: Lagomorpha, & Afrotheria, Tubulidentata, Proboscidea, Sirenia, Hyracoidea, Afrosoricida & Macroscelida – Quiz on 10/27 or 10/28
X	10/27, 10/28	Lab 8: Mammal Diversity: Carnivora & Pholidota – Quiz on 11/3 or 11/4
XI	11/3, 11/4	Lab 9: Mammal Diversity: Perissodactyla & Cetartiodactyla Quiz on 11/10 or 11/11
XII	11/10, 11/11	Review for Lab Final
XIII	11/17, 11/18	Lab Final
XIV	11/26, 11/27	No Labs (Fall Recess)
XV	12/3, 12/4	No Labs (On-line only)
XVI	12/10, 12/1	No Labs (On-line only)