

Mammalogy Fall 2006
Biol 425 (3 credits)

Instructor: Link Olson
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Office Hours: Wednesdays 2-3, Museum
(or by appt.)

Mondays 2-3 pm
(or by appt.)

Lecture schedule (subject to change). All lectures are in Irving 201, 1-2 p.m.

	Topic	Chapter (textbook)
Sept. 8	Introduction; Why study mammals?	1, 2
10	Mammalian characteristics	4
15	Teeth and jaws	4
17	Life of Mammals film	
22	Classification and systematics I	3 (31-46), 4
24	Classification and systematics II	
29	Mesozoic mammals evolution of endothermy	4
Oct. 1	Cenozoic mammals; Prototheria	9 (180-190)
6	Marsupials I	10, 11
8	Marsupials II	10, 11
13	"Insectivora" I, tenrecs, golden moles	12 (242-250), 3 (40-43)
15	Insectivora II, Life of Mammals	"
20	Dermoptera, Scandentia, Macroscelidea	12 (250-255)
22	Chiroptera I, Guest lecture, Hayley Lanier; Life of Mammals	6 (113-114), 13
27	Midterm exam (1-2)	
29	Chiroptera II; Evolution of echolocation	13 (261-264)
Nov. 3	Guest lecture, Dr. Brian Barnes: Physiological adaptations to the cold	9 (156-176)
5	Primates	14, 6 (111-112)
10	Carnivora I: Pinnipeds. Guest lecture, Lori Quakenbush, ADFG	16 (325-329)
12	Carnivora II	16 (314-325)
17	Rodentia I	18 (348-365)
19	Rodentia II; Lagomorpha; Guest lecture, Hayley Lanier	18 (365-369); Supp.
24	Xenarthra, Pholidota, Tubulidentata	15
26	Paenungulata, Biomechanics	19
Dec. 1	Perissodactyla, Artiodactyla	20, 6 (103-104)
3	Cetacea	14 (114-115), 17
8	Guest lecture, Dr. Kris Hundertmark: Taxonomy & Conservation	Supp.
10	Guest lecture, Hayley Lanier: Mammalian responses to climate change	Supp.
15	Final Exam (1-3 pm)	TBA

Textbook: Feldhamer, G.A. et al. 2004. Mammalogy. 3rd edition Johns Hopkins. Additional media: "Life of Mammals" film series by David Attenborough.

Both the textbook and DVD are on reserve in the BioSciences Library

Supplementary readings ("Supp") will be made available for some lectures

Lab schedule (subject to change). Most labs will be in Irving 103, 2-5 p.m.

		Topic
Sept.	9	Introduction; Tour of UA Museum; importance of museum collections
	16	Morphology I: Craniodental
	23	Morphology II: Postcranial and integumental
	30	Early therians; Monotremata
Oct.	7	Marsupialia; "Insectivora"
	14	Exam I
	21	"Insectivora" (cont.), Chiroptera
	28	Dermoptera; Scandentia; Macroscelidea; Primates
Nov.	4	Carnivora I
	11	Exam II; Special topic, " Preparing for graduate school or a professional career in mammalogy "
	18	Rodentia; Lagomorpha
	25	Xenarthra; Pholidota; Tubulidentata
Dec.	2	Perissodactyla, Artiodactyla, "Subungulates," Cetacea
	9	Final exam (2-5 pm)

Lab reading materials will be provided to you; there is no required text.

The laboratory section of this course will focus on the traits used to recognize different groups of mammals (including, but not limited to, the orders and families represented in the teaching collection and the species of mammals found in Alaska).

Laboratory instruction will include group discussion, small group work, hands-on activities, and analysis of anatomical features. Students will be expected to understand and use identification keys. A firm grasp of taxonomic and systematic nomenclature will be critical to success in this course, and it is essential that you read the lab materials before coming to class.

Be Advised: Indifferent or malicious treatment of museum and teaching specimens shall be construed as full consent to be added to the teaching collection in the event of an untimely demise on your part. Some specimens will be displayed for visual inspection only and will be marked "Do not touch." **Obey these signs!** In addition, traditional preparation of study skins has in the past involved the use of certain chemicals as preservatives, therefore *no food or drink will be allowed in the lab.*

LAB ATTENDANCE IS MANDATORY (NO EXCEPTIONS OR MAKE-UPS)

Course description: This course covers the diversity and life history of living and extinct mammals; their fossil record; evolutionary relationships among living groups; taxonomy; identification; biogeography and distribution; and fundamentals of mammalian evolution.

Course prerequisites: Biol 317 or permission from instructor; Junior standing or above.

Course goals and expected outcomes: The major goal of the course is to provide you with a familiarity of mammals sufficient to apply to a professional and/or graduate-level research or management career in biology. Specific objectives include the following:

- 1) Identify all the orders and selected families of mammals and understand the phylogenetic relationships among them.
- 2) Identify all of the terrestrial mammals of Alaska, know their general distribution, and be able to discuss key aspects of their natural history.
- 3) Appreciate and discuss the morphological, physiological, and behavioral diversity of mammals throughout the world.

Course instruction will consist of hourly lectures twice a week, a weekly lab, textbook and lab readings, and classroom discussion.

Course policies: Material presented in all lectures and labs scheduled during normal class periods is fair game on any quiz or exam. Participation in lecture and lab discussions will count towards your final grade (see below). Lectures and lab will begin immediately upon the hour of scheduled meeting times. Plagiarism and other forms of cheating will result in an automatic "F" in the class.

Please turn off or silence cell phones during class and lab. A cell phone ringing during class or lab will result in a deduction of 1% from your final grade; in addition, if your cell phone goes off during a test or quiz, you will be penalized 10% for that exam.

Attending office hours at least once during the semester is highly encouraged. *Students who attend at least one office hour will automatically earn 1% of the 5% of the grade based on participation.*

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disabilities Services (203 Whit., 474-7043) to provide reasonable accommodation to students with disabilities.

Additional course information:

This class requires extensive memorization of taxonomic nomenclature, anatomical features, and paleontological dates (in addition to lecture and reading material). This can seem daunting, but it is nonetheless necessary to gain an appreciation and understanding of mammalian diversity and evolution. *Study groups are strongly encouraged.*

Handouts and other materials will be made available on Blackboard, not necessarily prior to class (handouts will also be provided at the beginning of each lecture).

Extracurricular opportunities: One or more *voluntary* activities outside of class time will be scheduled to provide you with the opportunity to learn specimen dissection and preparation in the University of Alaska Museum's mammal research collection. You will learn about the value of museum specimens in science and conservation in both lecture and lab.

Guest lecturers: A number of researchers at UAF study mammals, making this a particularly good place to learn about them. There are several guest lectures scheduled for the class. Content from all of these lectures will be included in lecture and/or lab exams.

Course project: There is no term paper *per se* required for this class. Instead, each student will be required to prepare a new Species Account for the Animal Diversity Web. This will be discussed further in lecture and lab, but you should visit the Animal Diversity Web at:

<http://animaldiversity.ummz.umich.edu>

to get an idea of what's involved (go to "Mammals," then "Classification," then browse by Order. You can also search by "University of Alaska Fairbanks" to read accounts published by students in previous Mammalogy classes). You need not select an Alaskan species for your account, but you should discuss your choice with the instructor or TA prior to commencing. You must identify a species and get approval from the instructor or TA no later than 15 October and have a rough draft (worth 20% of the total term project) turned in for review no later than 17 November (but earlier is better!).

Much of the material covered in this course is also available on this web page, and you are *strongly* encouraged to read through the information in the "Information" tab and familiarize yourself with all the hyperlinked text in this section. Future mammalogy students will benefit from your contributions. This is the internet at its best!

Grading: Your final grade will be determined based on the following:

Lecture:

- 15% Midterm
- 25% Cumulative Final Exam

Lab:

- 5% Lab Exam I
- 5% Lab Exam II
- 5% Unannounced lab quizzes (covering both lecture and lab material)
- 5% Participation (1/5th of which you can earn *just by coming to an office hour!*)
- 20% Lab final

Lecture+Lab

- 5% Term project, rough draft
- 15% Term project, completed

Total: 100%

	<u>2004</u>	<u>2006</u>
A= 90-100	5	3
B= 80-89	8	7
C= 70-79	7	3
D= 60-69	1	1
F= 59 or below	1	0