Mammalogy (Biology 483) Fall, 2012 - Syllabus

Professor: Dr. Jack Sullivan Office: LSS 257 Phone: (W) -9049 (H) 882-1816
e-mail: jacks@uidaho.edu

Office Hours: Tuesdays after lecture (10:30-11:30); Wednesdays from 8:30-9:30.

Research Interests: Theoretical systematics; Rodent systematics; Hybridization and speciation; Molecular evolution, Comparative phylogeography, especially of montane taxa; Conservation genetics.

TA: Gen Metzger Lab: LSS 257 Phone: TBA e-mail: genevieve.ann@gmail.com
Savannah Patterson (Assistant TA) e-mail: patt2692@vandals.uidaho.edu

There is no required text.

Supplemental Text: Feldhammer et al., 2007. *Mammalogy: Adaptation, Diversity, and Ecology*, 3rd 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, 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 they may contain typos or misspellings**.

http://imnh.isu.edu/digitalatlas/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 However its taxonomy is out of date.

http://animaldiversity.ummz.umich.edu/chordata/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.

http://www.bucknell.edu/msw3/ - 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.

Prerequisite: Biology 115, Biology 116

Objectives: 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: 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.aaas.org/news/press_room/evolution/) and the National Academy of Sciences (http://www.nationalacademies.org/evolution/).

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.

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 (Friday, Dec. 14th; 7:30-9:30).

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

Disability Support Services Reasonable Accommodations Statement: Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 306 in order to notify us as soon as possible regarding accommodation(s) needed for the course.

Phone: 5-6307; email: dss@uidaho.edu; web: http://www.uidaho.edu/studentaffairs/taap/dss

T.A. Responsibilities: Gen 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, she and Savannah 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 (October 2)	100 pts.
Exam II (November 8)	100 pts.
Final Exam (December 14)	100 pts.
Laboratory:	
Quizzes – 8 quizzes for 10 points each	80 pts.
Lab Reports - 2 reports for 25 points each	50 pts.
Lab Exam I	70 pts.
Lab Final	80 pts.

Total	**580 pts.**

Note that lab quizzes will be given at the beginning of the subsequent lab period. For example, the quiz on Mammalian Anatomy will be given at the beginning of the lab sessions on September 10th/12th. If you are in the Monday lab section, you must take each quiz on the appropriate Monday; if you're in the Wednesday section, you must take each quiz on the appropriate Wednesday.

Lab reports are due at the beginning of the lab period, two or three weeks from the date the material was covered, as noted in the Lab Schedule.

Lecture Schedule

Week	Date	Lecture Topic	Reading
I	21 Aug.	Introduction, Characteristics of Mammals	Chapter 4
	23 Aug.	Mammalian Characters/Origin of Mammals	Chapter 4
II	28 Aug.	Origin of Mammals	Chapter 4
	30 Aug.	Origin of Mammals/Mammal Diversity	Chapter 4
III	4 Sept.	Mammal Diversity: Early Lineages/Monotremes	Chapters 4, 10
	6 Sept.	Mammal Diversity: Metatherians	Chapter 10
IV	11 Sept.	Mammal Diversity: Eutherians	Chapter 11-19
	13 Sept.	Mammal Diversity: Eutherians	Chapter 11-19
V	18 Sept.	Mammal Diversity: Eutherians	Chapter 11-19
	20 Sept.	Disparity in Diversity	Prim. Lit.
VI	25 Sept.	Disparity in Diversity	Chapter 4
	27 Sept.	Dentition	
VII	2 Oct.	Exam I	
	4 Oct.	Dentition/Species Concepts in Mammals	
VIII	9 Oct.	Evolution of Ear Ossicles	Crompton
	11 Oct.	Locomotion I: Flight	Chapter 12
IX	16 Oct.	Locomotion II: Functional Morphology	Chapter 5
	18 Oct.	Locomotion III: Terrestrial & Aquatic	Chapter 5
X	23 Oct.	Reproduction I: General Patterns	Chapter 9
	25 Oct.	Reproduction II: Adaptations	Chapter 9
XI	30 Oct.	Reproduction II: Adaptations	Chapter 9
	1 Nov.	Social Behavior	Chapter 22
XII	6 Nov.	Social Behavior	Chapter 22
	8 Nov.	Exam II	
XIII	13 Nov.	Population Cycles	Chapter 24
	15 Nov.	Population Cycles	Chapter 24
XIV	Fall Recess		
XV	27 Nov.	Conservation & Genetics	Prim. Lit.
	29 Nov.	Conservation & Genetics	Prim. Lit.
XVI	4 Dec.	Thermoregulation/Water Balance	Chapter 8
	6 Dec.	Thermoregulation/Water Balance	Chapter 8

Laboratory Schedule

Week	Dates	Topic
I	8/20, 8/22	No labs
II	8/27, 8/30	Lab 1: Mammalian Anatomy - Q
III	9/3, 9/5	Labor Day – No labs
IV	9/10, 9/12	Lab 2: Mammal Diversity: Monotremata, Metatheria, Xenarthra, & Insectivora - Q
V	9/17, 9/19	Lab 3: Systematics (Lab Report due 10/8 or 10/10)
VI	9/24, 9/26	Lab 4: Mammal Diversity: Chiroptera, Primates, Scandentia & Dermoptera - Q
VII	10/1, 10/3	Lab 5: Mammal Diversity: Rodentia I - Q
VIII	10/8, 10/10	Lab 6: Mammal Diversity: Rodentia II - Q
IX	10/15, 10/17	Lab 7: Population Biology (Lab Report due 10/29 or 10/31)
X	10/22, 10/24	Lab Exam I
XI	10/29, 10/31	Lab 8: Mammal Diversity: Lagomorpha, & Afrotheria: Tubulindentata, Proboscidea, Sirenia, Hyracoidea, Afrosoricida & Macroscelida - Q
XII	11/5, 11/7	Lab 9: Mammal Diversity: Carnivora & Pholidota - Q
XIII	11/12, 11/14	Lab 10: Mammal Diversity: Perissodactyla & Cetartiodactlyla - Q
XIV	11/19, 11/21	No Labs (Fall Recess)
XV	11/26, 11/28	Review for Lab Final
XVI	12/3, 12/5	Lab Final