

Biology 459, Spring 2015

Mammalogy Lab

Required Textbooks: Martin, R.E., R.H. Pine, and A.F. DeBlase. 2001. A Manual of Mammalogy, 3rd ed. McGraw-Hill, Boston.

Blackboard: <https://bb.its.iastate.edu/webapps/portal/frameset.jsp> - *Course: Mammalogy LAB*
Blackboard will be used as a supplement to material presented in class and as a grade book.

Course Description: 1 Credit. Accompanies Mammalogy Lecture. Study of the biology, ecology, and evolution of mammals. Laboratory focus on identification, distribution, habits, and habitats of mammals.
Prerequisites: A ECL459 Lecture credit or concurrent enrollment.

Objectives:

1. Be familiar with major groups of mammals and be able to identify species historically or currently occurring in the Midwest, as well as families that occur in other parts of the world.
2. Be able to integrate a broad knowledge of mammalian biology and ecology into specific topics encountered in their past and future coursework and research/management experiences.
3. Be able to design and conduct field surveys of mammal diversity and abundance using one or more different methods.
4. Appreciate the role of mammals in ecosystems, both natural and human-altered, and the adaptations that enable them to survive and thrive in different environments.
5. Be able to demonstrate an understanding of the evolution of mammals, emphasizing major evolutionary trends defining mammals.

Coursework: Class meets for 15 weeks, once weekly. The first unit of the lab focuses on basic characteristics of the mammalian skeleton and dentition. The second unit introduces you to the process of “keying” out mammal species followed by examination of the major mammalian classes. The last unit of the course will take us outdoors and look at methods for studying mammals in their habitats.

Grades will consist of in-lab exercises (15 labs x 10 pts. each), one course project (75 pts.) and 5 lab quizzes (30 pts. each). Most quizzes will primarily involve identification of mammals or mammal structures and questions covering natural history or structure/function information given in lab. Most quizzes will be in a standard lab practical format, in which a set amount of time is allotted to answer each question as students move around the room. The course project will allow you to explore one area of mammalogy of interest. Details on the project will be provided the week of 1/27 and is due the week of 4/25/204. Project ideas must be submitted and approved by the instructor by Friday 2/14.

Attendance: Attending class is essential for success in this course. **All students are expected to attend all class sessions.** For each lab, you will have a worksheet worth ~10 points due at the end of the class period. In order to earn points for this work you must complete the lab in class and turn the assignment in on-time.

Understanding that you all have lives outside of class (work, family, car trouble, etc.) and emergencies are inevitable, you will have the opportunity to make up **TWO** missed labs. If you miss a lab, you must contact your instructor VIA EMAIL up to **12 hours** post class time that was missed. You may then attend a lab section other than you own during the week in which you missed class. You must obtain permission of the other lab instructor (if applicable). Once you have completed the missed lab you may turn in the worksheet for full credit. The worksheet should be signed & graded at by the instructor of the lab that you attended and then turned into your regular instructor the following week. This is meant for emergencies only and not meant to allow students to switch lab sections on a permanent basis. Any further missed labs **cannot** be made up for points.

Open Lab: The lab will be open some Fridays to allow students to study. Dates and times will be posted on blackboard and announced in class.

Hints: The lab is scheduled for 3 hours and the instructor will be present to help you during that entire time period each week. Use the laboratory time wisely and take advantage of the expertise of your instructor and classmates so that you can learn the material.

Missed Quizzes: Because of the set up involved in this course and conflict with other classes, it will be difficult to make up a quiz. Generally quizzes cannot be made up. If there is a legitimate, documented reason that you cannot be in class for the quiz, you may be able to make up the quiz during another lab section. You must contact your instructor to make other arrangements within **12 hours** of the missed quiz.

Lab Safety: Lab Safety is a must. We will go over expectations on the 1st day of class. You are expected to follow all instructions given by the instructor when working in the lab. Any student that refuses to follow lab safety protocol or ignores instructor's rules in lab will be asked to leave the lab immediately and will not be allowed back until they meet privately with the instructor to review lab safety again and agree to adhere to lab safety protocols. Depending on severity, the student maybe referred to school officials for misconduct. All of ISU misconduct regulations still apply while out in the field.

Risks of Handling and Observing Wild Mammals: Mammalogy is taught under an Animal Care and Use Protocol that was approved by the Iowa State University IACUC. Various exercises in laboratory and on field trips may involve handling live mammals or mammalian tissues. Any exposure to live mammals or their products (feces, urine) could include risk of disease transmission. Some potential risks are acutely serious (e.g. rabies), others have received lots of attention (e.g. hantavirus), but exposure to many other zoonotic diseases might be relatively common but less emphasized (e.g. leptospirosis). Pathogens can be transmitted as easily as through casual contact, directly by bites, respiratory means, and from environmental contamination (i.e. in water). It is rare that healthy people who are not immuno-compromised would contract disease, but precaution is necessary. The most important precaution is common sense and good personal hygiene. Contact should be minimized by use of gloves, eye protection, face masks and proper handling devices. Students should routinely wash their hands and face with soap and water after handling mammals. Traps and handling devices are routinely washed with a bleach solution as a part of capture protocols for mammal trapping. In recognition of the risks, **no student will be required to handle live-traps or mammals if they choose not to do so.**

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| Grading Scale: | A = 94% or above | C = 73-76% |
| | A- = 90-94% | C- = 70-72% |
| | B+ = 87-89% | D+ = 67-69% |
| | B = 83-86% | D = 63-66% |
| | B- = 80-82% | D- = 60-62% |
| | C+ = 77-79% | F = below 60% |

Summary of Grades:

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| Project | 75 |
| Quizzes (5) | 150 |
| In-Lab Assignments (15) | <u>150</u> |
| TOTAL POINTS: | 375 |

Misconduct: The class will follow Iowa State University's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office. *Any student found to be in violation of the misconduct policy (i.e. "cheating") will receive an automatic 0 (failing grade) for the course.*

Make sure you are familiar with ISU Misconduct Policies:

<http://www.dso.iastate.edu/ja/academic/misconduct.html>

Disability Accommodation: Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact Dr. Kness to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with Dr. Kness you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email disabilityresources@iastate.edu
Retroactive requests for accommodations will not be honored.

Harassment and Discrimination: Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, Student Assistance at 515-294-1020 or email dso-sas@iastate.edu, or the Office of Equal Opportunity and Compliance at 515-294-7612.

Religious Accommodation: If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the Dean of Students Office or the Office of Equal Opportunity and Compliance.

Contact Information: If you are experiencing, or have experienced, a problem with any of the above issues, email academicissues@iastate.edu

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Lab Schedule

| Week | Topic | Identification | Chapter in Book |
|---|--|---|-----------------|
| Week #1 1/13 –1/17 | Introduction Mammalian skull and jaw | parts of skull and jaw | 2 |
| Week #2 1/20-1/24 | Teeth, Dentition | parts of skull and jaw dentition, dental formula | 3 |
| Week #3 1/27 – 1/31 | Quiz #1 – Parts of Skull, Teeth & Dentition Lab: Orders of Mammals, Keys and Keying | | 8,9 |
| Week #4 2/3-2/7 | Natural History of Monotremes, Marsupials, & Insectivores | Marsupials, Insectivora | 10-12 |
| Week #5 2/10-2/14 | Natural History of Bats & Primates **Project Idea Submissions Due ** | Chiroptera, Primates | 14, 16 |
| Week #6 2/17-2/21 | Study of Cetaceans and Lagomorphs | Cetacea, Lagomorpha | 20, 22 |
| Week #7 2/24-2/28 | Quiz #2 – Marsupials, Insectivora, Chiroptera Lab: Natural History of Rodents | Rodentia I | 23 |
| Week #8 3/3-3/7 | Quiz #3 – Rodentia I Lab: More study of rodents, study skin prep | Rodentia II | 23 |
| Week #9 3-10-3/14 | Quiz #4 – Rodentia II Lab: Natural History of Ungulates & Subungulates | Ungulates & Subungulates | 25-27, 5 |
| March 16th – 20st Spring Break | | | |
| Week #10 3/24-3/28 | Natural History of Carnivores | Carnivora | 19 |
| Week #11 3/31-4/4 | Quiz #5 – Artiodactyla, Perissodactyla, Subungulates, Carnivores Lab: Prep for Mammal Field Studies | | 36 |
| Week #12 4/7-4/11 | Field Lab | | |
| Week #13 4/14-4/18 | Field Lab | | |
| Week #14 4/21-4/25 | Field Lab- Mark & Recapture Project DUE | | 30 |
| Week #15 4/28-5/2 | Data Analysis Project Discussions | | |