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Syllabus

BISC 350 MAMMALOGY (Fall 2014)

Tues/Thurs 1:00-2:15 (Shoemaker 408) & Thurs 2:30-3:50 (Shoemaker 205)

Course Description: Mammalia, the taxonomic group to which humans belong, is the smallest class of vertebrates. Nevertheless these mammals exhibit great diversity. They live in every available habitat on the planet and range in size from a few grams (the bumblebee bat) to several tons (the blue whale). This course presents a survey of the shared characteristics and phenomenal diversity of the vertebrate class Mammalia, including their anatomy, physiology, behavior and evolutionary history. Learning will occur through regular lectures, student presentations, field and laboratory experiments, and field trips. Student performance will be judged through class participation, exams, weekly discussion questions and data analyses, and other activities.

Learning Outcomes: After completing this course, a student will know the taxonomy of the major groups of mammals, understand their evolutionary history and adaptive characteristics, and be able to identify local mammal species. The practical skills learned may include dichotomous key construction and use for species identification, specimen preparation, live trapping techniques, radio-telemetry triangulation, and mark/recapture analysis.

Required Texts:

1. ***Mammalogy: Adaptation, Diversity, Ecology*** by George A. Feldhamer, Lee C. Drickamer, Stephen H. Vessey, Joseph F. Merritt, Carey Krajewski. (2007) Johns Hopkins Univ Press ISBN-13: 978-0-8018-8695-9 (Hardcover)
2. ***Peterson Field Guide to Mammals of North America*** by Fiona Reid (2006) Fourth Edition only! Houghton Mifflin Co, NY. ISBN 13: 978-0-395-93596-5 (Softcover)

| Points Available | TOTAL | 800 |
|---|--------------|------------|
| 4 exams x 100 pts each = | | 400 |
| 12 discussion homeworks x 10 pts each = | | 120 |
| Wikipedia mammals project = | | 130 |
| Class/Lab/Field assignments/participation = | | 150 |

Your final grades are based on these point percentages with the exceptions described below:

A*, 89-100%; B, 80-88%; C, 70-79%; D, 60-69%; F, <60%;

*you must earn B or better on the cumulative final exam to be eligible for an "A" in the course

Exams: a combination of multiple choice, short answer and essay. The final exam is *cumulative*.

Discussion questions: Each week you will be asked to answer one or more of the questions that appear at the end of the assigned textbook chapters, or will be given a related homework exercise.

Wikipedia mammals project: Over the course of the semester you will learn how to research what is known about a particular mammal species, so that you can edit and improve the information available worldwide via Wikipedia, the free online encyclopedia that is consulted by millions daily.

Class/Lab/Field assignments/participation: This includes but is not limited to handing in properly completed assignments that are on time, attendance and punctuality, participating in discussions and asking questions, being an amiable and enthusiastic classmate, proper animal respect, care and handling, and concern with safety. You start with zero participation points and must *earn* these points each week. Never plagiarize!

BISC 350 Schedule of Reading Assignments, Lab Topics & Exams

| Week | Date | Topic | Lab/Field | Textbook Reading* |
|-------------|----------------|---|---|---|
| 1 | 8/26 & 8/28 | -What is a mammal? -Mammal orders and families | -Zoonoses -Dichotomous keys | Chapters 1 & 2 Pages 213-217 |
| 2 | 9/2 & 9/4 | -Teeth, Foods, Feeding -Biogeography -Monotremes and marsupials | -Skulls (Bat netting on 9/5; optional) | Chapter 7 Chapter 5 Chapter 11 Field Guide |
| 3 | 9/9 & 9/11 | -Integument (hair, etc) -Insectivores and others | -Skins -Hair and fur - Identifying insectivores | Chapter 6 Chapter 12 Field Guide |
| 4 | 9/16 & 9/18 | EXAM ONE -Chiroptera (Bats!) | - Identifying bats | Chapter 13 Field Guide |
| 5 | 9/23 & 9/25 | -Primates -Life Histories | Option 1- All Day Thurs. Zoo Trip** | Chapter 14 Chapter 25 |
| 6 | 9/30 & 10/2 | -Xenarthrans and other weirdos -Environmental adaptations | Thermoregulation | Chapter 15 Chapter 9 |
| 7 | 10/7 & 10/9 | -Carnivores | Option 2- Saturday All Day Zoo Trip** | Chapter 16 Field Guide |
| 8 | 10/14 & 10/16 | EXAM TWO -Cetaceans (whales and dolphins) -Reproduction | Reproductive tracts and placental connections | Chapter 17 Chapter 10 |
| 9 | 10/21 10/23 | -Rodents and rabbits | - Setting up trap grid for rodents** | Chapter 18 Chapter 3 Field Guide |
| 10 | 10/28 10/30 | -Proboscidea (elephants +) -Communication | -Trapping and marking ** | Chapter 19 Chapter 21 |
| 11 | 11/4 & 11/6 | -Perissodactyla and Artiodactyla -Domestics EXAM THREE | Trapping and marking ** | Chapter 20 Chapter 28 |
| 12 | 11/11 11/13 | -Sexual behavior -Social behavior | Scent marking | Chapter 22 Chapter 23 |
| 13 | 11/18 11/20 | -Dispersal -Parasites | Parasitology | Chapter 24 Chapter 27 |
| 14 | 12/2-4 | -Conservation | Saving the world | Chapter 29 |
| 15 | 12/11 12pm | <i>Cumulative</i> FINAL EXAM | | |

*There will be some additional readings posted via Blackboard

**You are expected to perform some field work/trips outside of regular class hours.

IMPORTANT SAFETY INFORMATION for BISC 350

1. This class necessarily involves the handling of both living mammals and mammal corpses/parts/feces.
2. Also there is some group and independent (unsupervised) fieldwork requiring you to capture and handle small mammals.
3. It is possible to contract diseases from and/or be injured by the activities required of this class. You will be asked to sign a waiver in which you acknowledge that you accept these risks.
4. *Basic* biosafety instructions and equipment will be provided to you. The likelihood of infection or serious injury is probably slight. However it could happen. Injury may occur in places without cell phone reception. You assume this personal risk by taking this class. You may decide to obtain additional safety equipment (snake proof leggings, HEPA respirator, etc) to protect yourself more. When traveling on field trips, you should wear your seat belt.
5. Please read the basic safety instructions provided to you during these exercises. If you have a medical condition that predisposes you to infection, you probably should consult your physician about whether to take this class. The CDC provides helpful information on zoonoses (diseases contracted from other animals) at its website: <http://www.cdc.gov/healthypets/diseases/index.html>
6. Common sense, preparedness, being careful and avoiding distractions are essential to your safety. Ask your instructor if you're not sure. If injured or ill, seek medical attention. Report any injuries or illnesses to your instructor, or the biology office as soon as possible. You are financially responsible for your own medical care.

After you have reviewed the zoonotic risk, you will be asked to sign a statement confirming that you understand the risks of taking a course in Mammalogy, and accept these risks and all associated liabilities.

ZOONOSES ASSIGNMENT

1. Go to the CDC website on zoonoses:

<http://www.cdc.gov/healthypets/diseases/index.html>

2. Peruse the list of diseases that can be transmitted from non-humans to humans.

3. Choose **one mammal-transmitted zoonotic disease**, and prepare brief written answers to each of these questions (be prepared to hand this assignment in to Dr. Buchholz during your next class meeting).

- a. what is the name of the disease?
- b. what is the name of the organism that causes the disease to occur?
- c. what types of mammals carry this disease organism?
- d. specifically, how is the disease transmitted from wild mammals to humans?
- e. what are the symptoms in humans infected with this disease? Is it deadly?
- f. how can you protect yourself from catching this zoonotic disease?

4. Note that if you click to expand the Pets link on the left, you can see the zoonotic risks of handling non- wild animals that you may be exposed to everyday, such as pet dogs and cats. Also the CDC has a link on the Health Benefits of Pets.

BISC 350 Fall 2014 Mammalogy
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"BISC 350 is one of many biology electives. It is optional for your degree. It requires students to participate in field trips, research, or studies that include contact with animal specimens and live animals, as well as course work that will be performed off-campus, sometimes without faculty supervision and outside of normally scheduled class hours. Participation in such activities might result in accidents, illness or personal injury. Students participating in the course are aware of these risks, and agree to accept all liability. They also agree to hold harmless the University of Mississippi, the State of Mississippi, the Trustees of the IHL and its officers, employees, and agents against all claims, demands, suits, judgments, expenses and costs of any kind on account of their participation in the course activities."

I have read and agree to these conditions:

_____ (your signature)

Print your name: _____ (must be legible)

Date: _____