

## **Biology 378 – Mammalogy Fall 2012**

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Office hours: Stop by if I'm around

T R 11:00 - 11:50 NFAC 221

Lab section 1: R 8:00 - 9:50 TNR 457

Lab section 2: F 8:00 - 9:50 TNR 457

Lab section 3: R 1:00 - 2:50 TNR 457

Required Textbook: Feldhammer et al. Mammalogy; Adaptation, diversity, and ecology (bookstore rental);

Recommended book: Kurta, Mammals of the Great Lakes Region (bookstore purchase).

### **Course Description and Objectives**

The lecture portion of the course has two primary objectives: (a) the understanding of the Class Mammalia, accomplished primarily through lectures and discussions focusing on mammal structure and function, diversity, ecology, behavior, and biogeography; and (b) an introduction to taxonomic groups designed to complement the laboratory. We will use the textbook, lecture, and primary literature to discuss a topic online each week. The laboratory portion of the course will focus on mammalian diversity through the study of museum material, pictures, video, and literature. Efforts will be made to cover mammals of Wisconsin, North America, exotic mammals popular in zoos, as well as interesting mammals from around the world. Based on feedback from prior students we will be using Desire2Learn (D2L) to help prepare for laboratory practicals and to organize course materials, as well as administer quizzes and provide a forum for discussion.

### **Learning Outcomes**

- ✓ Examine mammal specimens and describe similarities and differences in order to distinguish, classify, and name them.
- ✓ Solve problems individually and in groups related to laboratory and lecture assignments.
- ✓ Research, analyze, and organize scientific data.
- ✓ Communicate effectively in writing and speaking how to ask good scientific questions and how to design an experiment and test hypotheses.

### **Mammalogy and the Bigger Picture**

UWSP offers one of the few mammalogy courses in the state and one of the largest, in terms of enrollment, in the country. Skills learned in mammalogy are applicable to the fields of wildlife management, epidemiology and zoonotic disease transmission, systematic biology, animal control, and the behavioral sciences. This course fulfills 3 credits of 300 level course work towards the Forty Credit Rule, a General Degree Requirement for a Bachelor of Science Degree and a Bachelor of Arts Degree. The course also fulfills an elective requirement for the Biology Major (advanced animal biology), an elective requirement for the Environmental Education and Interpretation

option for the Resource Management Major, an elective requirement for the Wildlife Ecology Major, and an elective requirement for the Wildlife and Conservation Biology Minors.

### **Grading**

Your grade in this class will be determined by three laboratory practicals, ten quizzes, daily notes, and 2 exams. The lab practicals are worth 50 points each (50x3=150 points), and quizzes worth 5 points each (5x10=50 points). Notes will be graded 20 times during the semester and each lecture will be worth 5 points (20x5=100 points). Download note outlines from D2L and use your textbook to fill in pertinent information. I would prefer that you upload your notes to d2l and print a copy to bring to class. You can hand write them as well and show them to me before class. By completing notes before class everyone should know what we're talking about and be prepared to discuss the topic in class. There will be two lecture exams each worth 100 points (100x2=200 points). Thus, there are a total of 500 points to be earned in this class. The final points will be added up, divided by 500, and multiplied by 100; the percentage obtained will determine your grade.

90-100% = A

80-89% = B

70-79% = C

60-69% = D

< 60% = F

You will not be able to reschedule a lab practical or exam (lecture is a 1pm but I've had students sleep through class) so make sure to set your alarm on "really frickin' loud" the night before a lab practical or exam. Missed exams will result in a zero. Extreme cases will be reviewed on an individual basis.

### **Quaardvark Assignment (100 points)**

**Why?** (read *Start With Why* by Simon Sinek)

It turns out that employers are not interested in your ability to complete a lab assignment or dazzle them with your knowledge of skull bones and scientific names. They are looking for good communication skills, the ability to work in teams, positive attitude, and problem solving skills. Knowing what employers are looking for in college graduates is important since it offers you, the student, the opportunity to work on these basic skills in all of your classes. Employers will give you specific projects to work on and you will be expected to solve problems, present findings, and make recommendations. You are only valuable to the company if your solutions work. Knowing this, the student that does not take a classroom assignment seriously does so at their own peril, and worse, the peril of the team.

College is a four year job interview. One of the most profound trends over the past few decades has been a sharp shift toward scientific teamwork. We

rely on group creativity because we live in a world of very hard problems and many of the most important challenges exceed the capabilities of the individual imagination (read *Imagine* by Jonah Lehrer). Because the best research now emerges from groups (consider the author lists from any primary literature paper you read this semester), the student that resists working in groups risks developing a number of important job skills. This assignment is designed to develop the skills employers are interested in. You will be asked to think creatively as an individual, think creatively as a team, bring your unique perspective to the team, be held accountable by the team, solve problems, and communicate findings. The top five products will be shared with the Quardvark team at the University of Michigan. Those will be voted on by both myself and the class.

### **How?**

It begins with questions. Asking good questions takes lots of practice. The ability to translate observations from nature into questions that can be answered defines scientific creativity. If you are wondering if you should go to graduate school, you need to ask yourself, “Do I ask good questions? What questions interest me?” A good scientific paper begins with a good question (usually found in the introduction) and ends with more good questions (usually found in the discussion). Once you have decided on a list of questions, you need to collect the data to address the questions. In this exercise you will use Quardvark (QVK) as your inquiry tool. You will work as a group to decide which of your questions can be addressed using the data available in QVK.

### **What?**

You will develop your question and make a final presentation to the class. While it is not a requirement, I encourage you to consider using Prezi.com since you can collaborate on your project, and it’s easy to share with your instructors (i.e. me) and the research community at large (i.e. the QVK team at Michigan).

### **Assessment**

This assignment is worth 100 points; the equivalent of a full exam grade or 2 lab exams. It’s 20% of your final grade in the class.

*Individual points (16 points):* There will be two short all or nothing assignments. There will be a 10 point in class writing assignment and an 8 point D2L survey related to the project.

*Group participation points (6-24 points):* This idea comes from years of putting students in groups and having to hear complaints that one or two people are doing all the work. Then I watched *The Last Lecture* by Randy Pausch

(check it out – very inspirational) and learned that he always incorporated a peer assessment element into his group projects. This can be very difficult as it requires a certain amount of objectivity that does not come naturally for most people. The natural thing to do is reward your friends and punish your enemies or work out a deal that is equitable for all. You will assign points to your teammates anonymously. Excluding yourself, you will award the person you feel contributed most to the team 4 points, the next most valuable 3 points, and so on to the least valuable who gets 1 point. If you feel there is a tie for 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup>, you can split the points (e.g. if there are 2 teammates tied for the top spot you can take 7 points and give each 3.5 points, 2 for the bottom spot you can take 3 points and give each 1.5). You will do this twice during the assignment so the maximum number of group points a student can get is 24 points and the minimum is 6 points.

*Team points (50 points): Alienus Non Diutius* is Latin for “Alone no longer”. It is displayed prominently at Pixar, one of the most innovative and creative movie studios in the world. My brother’s girlfriend worked for Pixar on *The Incredibles*, and as I watched the credits looking for her name I was impressed by the number of people that worked on that movie. That individual product required a lot of teamwork. Your team will receive a group grade for the project, meaning all members of the team will get the same grade. The 50 points will be assigned as follows:

10 points for the team list of questions with a short paragraph for each regarding how they can or can’t be answered using QVK; 30 points for the organization and quality of the Prezi presentation; 10 points for the final presentation to the class.

### **Academic Dishonesty**

Any form of cheating on exams, quizzes, home works, or any misrepresentation of your work will result in zero (0) points being recorded for that graded component of the course. **This includes plagiarism of published works or fellow students. Please see me for any clarification on what constitutes plagiarism if you have doubts.** All students are required to adhere to the standards outlined by UWS/UWSP Chapter 14, Student Academic Standards and Disciplinary Procedures which can be found at the following web address: <http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf>

**\*\*\*SYLLABUS\*\*\***

Date	Topic	Chapter Reading (Feldhamer)		
September	4	Introduction		
	6	<i>Where do good ideas come from?</i>		
	6/7	Lab 1: Handling and use of museum collections Bones and dental formula		
	11	Monotremes and Marsupials	11	
	13	Foods and feeding	7	
	13/14	Lab 2: Monotremes and Marsupials		
	18	Insectivores	12	
	20	Locomotion	6	
	20/21	Lab 3: Insectivora		
	25	Echolocation	13	
	27	<i>Using Metaphor and Analogy in problem solving</i>		
	27/28	Lab 4: Chiroptera		
	October	2	Environmental adaptations	9
		4	Social behavior	23
4/5		<b>Lab 5: Lab Practical I</b>		
9		<i>The death of curiosity at age 7</i>		
11		Biological Rhythms	8	
11/12		Lab 6: Primates, Scandentia, Dermoptera, Whales?		
16		Carnivora	16	
18		Sexual selection, parental care, and mating systems	22	
18/19		Lab 7: Carnivora		
23		Communication, aggression, spatial relations	21	
25		Guest lecture (Huspeni)		
25/26		Lab 8: No lab		
30		Guest lecture (Alger)		
November		1	No Lecture	
	1/2	Lab 9: No lab		
	6	Dogs and More Dogs Video		
	8	Dispersal, habitat selection, and migration	24	
	8/9	<b>Lab 10: Lab Practicum 2</b>		
	13	Rodentia and Lagomorpha	18	
	15	Populations and life history	25	
	15/16	Lab 11: Rodentia and Lagomorpha I		
	20	Community ecology	26	
	22	Thanksgiving Break		
	22/23	Thanksgiving Break		
	27	Domestication and domesticated animals	28	
	29	Zoogeography	5	
	29/30	Lab 12: Rodentia and Lagomorpha II		
December	4	Perissodactyla and Artiodactyla		
	6	Parasites and diseases I (On the trail of a killer virus)	27	

6/7	Lab 13: Perissodactyla and Artiodactyla	
11	Parasites and diseases II	27
13	No Lecture*	
13/14	<b>Lab 14: Final Lab Practicum*</b>	
<b>20</b>	<b>Final Exam 12:30 – 14:30</b>	

If updates are made to this syllabus the most recent syllabus will be posted on D2L. I will also send any updated syllabus to the class via email as an attached file.