

Biology 378 – Mammalogy Summer 2018

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Office hours: What office?

Kemp Field Station, Woodruff, WI

Online

Required Books: Field notebook (Rite-in-the-Rain) and waterproof pen (all the best field biologists use Microns)

Recommended Book: Mammals of the Great Lakes Region. The recent edition (available on Kindle [cheapest option] and Adobe e-book as well) has the most up-to-date taxonomy and useful information in the back of the book. I will bring some resource books with me.



Course Description and Objectives

I have been teaching 3 sections of mammalogy since 2001 and it generally closes in the first few days leaving me with a class full of seniors. Don't get me wrong, I like seniors, but they tend to leave shortly after I get to know them. Summer mammalogy offers the opportunity for a broader variety of students to register for the course, and it's generally more memorable than the traditional fall course (owing to the potential for tornadoes and run ins with bears and such). This is a format up at Kemp Field Station for the 9th time and I hope to get constructive feedback from you for future offerings of this course. Previously I taught a *Field Methods in Mammalogy* course each summer at Pigeon Lake Field Station near Drummond, Bayfield County (2002-2009, the station has since

closed). Summer is something I look forward to since I love being outdoors and working with smaller groups of students out in the field. With 75 mammalogy students in the fall, it's logistically difficult to incorporate intensive field studies. This course combines my traditional fall mammalogy course with my summer methods course. The tradeoff will be content. You will know more about the field aspects of mammalogy than the traditional fall students, but will only get a fraction of the lectures (10 versus 24). I think professors that treat summer courses as crash courses of their traditional courses are crazy. You can't do in four weeks what you normally do in 14 weeks. We are also going

to conduct a class-wide experiment on squirrel foraging behavior. You will be required to submit a final research paper on this by the last day of the course (August 17th). This should be uploaded to the dropbox in D2L.

Learning Outcomes

- ✓ Examine mammal specimens and describe similarities and differences in order to distinguish, classify, and name them.
- ✓ Conduct a complex field experiment and write a scientific paper.
- ✓ Critically read and discuss primary literature in mammalogy.
- ✓ Conduct field studies of mammals using a variety of census techniques.



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 your final scientific paper, one laboratory practical, ten quizzes, a field notebook, and a final exam. The paper is worth 50 points, the lab practical is worth 50 points, quizzes worth 5 points each, lab notebook worth 50 points, and the final exam worth 100 points. Thus, there are a total of 300

points to be earned in this class. The final points will be added up, divided by 300, and multiplied by 100; the percentage obtained will determine your grade.

- 90-100% = A (90-92 A-)
- 80-89% = B (80-82 B-, 88-89 B+)
- 70-79% = C (70-72 C-, 78-79 C+)
- 60-69% = D (68-69 D+)
- < 60% = F

The lab practical exam will be at Kemp Field Station on Friday afternoon. You will turn in your field notebooks on Friday and I will grade them so that you can refer to them for your final on Saturday morning. Your field notebook is a record of what you did during the week in the field either individually or as part of a group (small group or entire class). I'll talk more about the field notebook at Kemp.

Much of the work for this course will be done online using D2L and other resources. The mammal species accounts this summer will be submitted to Animal Diversity Web. Online quizzes are based on readings in the primary literature. They include papers on a variety of taxonomic groups such as monotremes, insectivores, rodents, carnivores, and primates, and a variety of topics such as feeding ecology, evolution, reproductive strategies, and neurophysiology. The experiment on squirrel behavior was developed by Joel Brown and is being conducted by numerous courses throughout the country. We will be sharing our results with Project Squirrel.



Academic Dishonesty

Any form of cheating (including working together on the final exam, plagiarizing on the species account), or any misrepresentation of your work will result in zero (0) points being recorded for that graded component of the course.

SYLLABUS

Date	Topic
July	28 Introduction, Methods and Techniques for studying mammals Discussion: Kelt et al. Hantavirus risk
	29 Lecture 1: Environmental adaptations Lab 1: Handling and use of museum collections Bones and dental formula

- Lecture 2: Echolocation
 Field activities: Set traps for small mammals (Hemlock stand),
 Census bats, set up squirrel experiment.
 Movie: Killer Shrews
- 30 Lecture 3: Locomotion
 Lab 2: Marsupials, insectivores, and bats
 Lecture 4: Primary literature discussion
 Field activities: Check traps and process animals, reset traps
 Census bats
 Squirrels!
- 31 Lecture 5: Biological Rhythms
 Lab 3: Carnivores
 Lecture 6: Sexual selection, parental care, and mating systems
 Field activities: Check traps and process animals, move traps
 (Hemlock blow-down), Squirrels!
 Powder tracking demo part 1
 Video: Dogs and More Dogs
- August 1 Lecture 7: Social behavior
 Lab 4: Rodents and rabbits
 Lecture 8: Communication, aggression, spatial relations
 Field activities: Check traps and process animals, reset traps
 Powder tracking demo part 2, Squirrels!
- 2 Lecture 9: Dispersal, habitat selection, and migration
 Lab 5: Open lab, study for practical
 Lecture 10: Parasites and diseases
 Field activities: Check traps and process animals, pick up traps,
 Squirrels!
 Video: On the Trail of a Killer Virus
 Movie: Devil Bat (with Bela Lugosi)
- 3 Lab Practical exam
 Field activities: Northwoods Wildlife Center, clean traps and lab
- 4 Final Exam
- July 23 - August 17 Online activities; Quizzes and upload final paper

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.