Mammalogy

Fall   **2023**

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Class Times

Tuesdays and Thursdays from 8:00 – 8:50 in TNR 120. Labs will be Thursday and Friday in TNR 457.

Resources

Required textbook: Mammalogy by Feldhammer et al. / Mammals of the Great Lakes Regions by Kurta

What will we do in mammalogy and what will I learn?

> "The scientist is not the person who gives the right answers, he is the one who asks the right questions." – Claude Levi-Strauss

The lecture portion of the course has two primary objectives. First, we will engage the mammals, primarily through lectures and discussions focusing on mammal structure and function, diversity, ecology, behavior, and biogeography. Second, we will engage ourselves by working on skills that matter in the marketplace. The laboratory portion of the course will focus on mammalian diversity through the study of museum materials and pictures. 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 Canvas to help prepare for laboratory exams and to organize course materials.

Learning Outcomes

Examine mammal specimens and describe similarities and differences in order to distinguish, classify, and name them.

Identify mammalian species and diagnostic anatomical structures.

Solve problems individually and in groups related to laboratory and lecture assignments.

Investigate a research question, including how to design an experiment, manage a dataset, test hypotheses, and present results in a public forum.

Construct a collaborative seminar presentation.

I love Josh Keyes. Name all the mammals.

"The whole reason people fill their homes with furry carnivores and not with, say, iguanas and turtles, is because mammals offer something no reptile ever will. They give affection, they want affection, and respond to our emotions the way we do to theirs." - Franz de Waal, Primatologist

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. 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 is determined by 2 laboratory practical exams, a squirrel research activity, 4 challenges, and 2 exams. I will be trying something new this semester, using a combination of specification grading and contract grading. Specs grading means that I will assess each assignment and exam on a 4-point scale. Specs grading uses single-level rubrics to provide more clarity on what I expect regarding excellence (4), satisfactory (3), and poor performance (2 or 1). Because I use minimum grading, you can't earn less than 2 on a single assignment IF you turn it in. Bad days should not result in no hope to recover a good grade in the course. Further, the challenges can be resubmitted for full points.

Contract grading takes the guesswork out of what you need to get a good grade in the course. I believe worrying about grades gets in the way of learning, and I want the focus of this course to be on learning. All the work and rigor are still in the course, I am just trying to remove the anxiety so we can focus on learning.

SQUIRRELS

Squirrels!!

This semester we will once again contribute to a national dataset on squirrel behavior. This is something that a group of mammalogists around the country have been developing for a few years, and we are in our last year of NSF funding to assess the effect of these modules on student learning. This module worked particularly well in the Coronavirus landscape when several classes around the country submitted data.

Data collection (4 points): You will contribute data on the squirrel behavior project as individuals and submit your data to a national dataset. On November 10th I will download the dataset and upload it to Canvas. This is the dataset you will use for your team presentations. I will include a rubric on the assignment to guide you.

Team presentation (4 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 ex-girlfriend worked for Pixar on The

Incredibles (he's married now to the librarian at the Sierra Club, an even cooler job!), and as I watched the credits looking for her name the number of people that worked on that movie impressed me. That individual product required a lot of teamwork (my wife and I always stay for the credits – we paid for them😊). Your team will receive a group grade for the team presentation portion of the project, meaning all members of the team will get the same grade.

Self and Team reflection (4 points): You will assess yourself and your teammates regarding their individual contributions as a team member this semester.

Academic Dishonesty: Any form of cheating on exams, homework, 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**

From Darwin's Journal or Researches December 7th, 1834, Chiloe Island, Chile

7th In the morning we stopped for a few minutes at a house at the extreme North point of Isd of Laylec. This was the last house; the extreme point of S. American Christendom; & a miserable hovel it was. — The latitude is about 43° 10', which is considerably to the South of the R. Negro on the Atlantic coast of America. The people were miserably poor & as usual begged for a little tobacco. — I forgot to mention an anecdote which forcibly shows the poverty of these Indians; some days since, we met a man who had travelled 3 & ½ days on foot, on bad roads, & had the same distance to return to recover the value of an axe & a few fish! How difficult it must be to buy the smallest article, where such trouble is taken to recover so small a debt. —We had a foul wind & a good deal of swell |502| to struggle with, but we reached the Island of S. Pedro, the SE extremity of Chiloe, in the evening. When doubling the point of the harbor, Mrs Stuart & Usborne landed to take a round of angles. — A fox (of Chiloe, a rare animal) sat on the point & was so absorbed in watching their mænœvres, that he allowed me to walk behind him & actually kill him with my geological hammer.

doubts. The rise of ChatGPT has already appeared in our classrooms in mostly bad ways. 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.

These two gray squirrels were caught on a trail camera foraging on the seed trays. Each tray has three liters of play sand with 10 grams of shelled sunflower seeds mixed into the sand. The trays remain out for about seven hours. The sand is sifted to separate out the remaining seeds, and these are weighed. The amount of seems remaining is called the Giving Up Density (GUD).

With 75 students, we will not tackle the GUD module, but instead contribute to the squirrel behavior module. During the Covid lockdown a number of institutions around the country contributed to this module, growing the dataset immensly thus increasing the statistical power of the data. I will intruduce you to some free, powerful statistical packages that are easy to use. Some of the challenges will be directly related to improving your ability to properly summarize and analyze the data so that you can do well on your final presentations. With 15 teams we will need 3 lecture periods with only 10 minutes max allocated to each team. You got this! Presentations like this are tangible artifacts of developing your job readiness skills.

Date		Topic
September	5	*Psychedelic haiku bat hand challenge*
	7	Phylogeny and diversification of mammals
	7-8	Lab 1: Bones and dental formula
	12	Monotremes and Marsupials
	14	Foods and feeding
	14-15	Lab 2: Monotremes and Marsupials
	19	Insectivores
	21	Locomotion
	21-22	Lab 3: Insectivores
	26	*Schmeeckle bats challenge*
	28	Echolocation
	28-29	Lab 4: Chiroptera
October	3	Environmental adaptations
	5	Communication, aggression, spatial relations
	5-6	Lab 5: Pilosa, Cingulata, Pholidota, Tubulidentata
	10	Biological Rhythms
	12	Reproduction
	12-13	**Lab 6: Lab Exam 1**
	17	Sexual selection, parental care, and mating systems
	19	**LECTURE EXAM I**
	19-20	Lab 7: Marine mammals
	24	Carnivora
	26	*Conceptual blending and the marten challenge*
	26-27	Lab 8: Carnivora
November	31	Primates
	2	Dogs and more dogs
	2-3	Lab 9: Primates
	7	Rodentia and Lagomorpha
	9	Social behavior
	9-10	Lab 10: Rodentia and Lagomorpha I
	14	*Data cleaning/Jamovi challenge*

"If you want something done right, then ask a mammalogist to do it."

- *James S. Findley*

	16	Dispersal, habitat selection, and migration
	16-17	Lab 11: Rodentia and Lagomorpha II
	21	Populations and life history
	22	Thanksgiving Break
	28	Perissodactyla and Artiodactyla
December	30	Community ecology
	30-1	Lab 12: Perissodactyla and Artiodactyla
	5	Parasites and Diseases
	7	Presentations I
	7-8	**Lab 13: Final Lab Practicum**
	12	Presentations II
	14	Presentations III
	18	**Final Exam – 12:30 – 2:30 (Monday*)**

*   If you are graduating in the fall semester and want to take your final before your graduation ceremony please contact me.

COVID-19 and other precautions

We will follow university guidance (which includes CDC guidance) regarding COVID-19, monkeypox, and other health-related issues. The CDC website provides guidance on isolation and precautions related to COVID. As needed, we will announce policy changes that affect you in this class. It is expected that everyone will respect the needs and preferences of classmates and instructors.

How do I succeed in this course?

One book I recently read said that the primary reason why American education is faltering is its all-around lack of rigor. Teachers stopped having high expectations of their students for fear of poor evaluations, which are used in retention, tenure, and promotion decisions. Further, students fail to see the connections between their future employment and what they are being asked to do in the classroom.

I will not underestimate your abilities and have high expectations but designed the course around both mammal content and providing job readiness skills. You will succeed if you trust that I am equipping you to be the best professional regardless of your career choice. I have references and their names are Allie, Ana, Amber, Kaitlyn, Eric, Monae, Ryan, Conner, Bryn, Michael, John, and countless other former mammalogy students who are crushing it out there.

The top 8 competencies employers say they seek in current college graduates in order of importance.

NACE CAREER COMPETENCY*	IMPORTANCE TO EMPLOYER
Critical Thinking	98.5%
Communication	98.5%
Teamwork	97.7%
Professionalism	86.9%
Equity & Inclusion	85.4%
Technology	81.5%
Career & Self–Development	70.0%
Leadership	58.5%

NACE
NATIONAL ASSOCIATION OF COLLEGES AND EMPLOYERS

SOURCE: NACE 2022 JOB OUTLOOK REPORT

*Defined as: naceweb.org/career–readiness/competencies/career–readiness–defined

"Individual commitment to a group effort – that is what makes a teamwork, a company work, a society work, a civilization work."
- Vince Lombardi

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

Is College Worth It? It depends on what Gallup refers to as the "Big Six". Graduates who had the following six experiences perform better on measures of long-term success compared with graduates who missed the mark on these experiences:

1. A professor who made them excited about learning.
2. Professors who cared about them as a person.
3. A mentor who encouraged them to pursue their goals and dreams.
4. Worked on a long-term project.
5. Had an internship where they applied what they were learning.
6. Were extremely involved in extra-curricular activities.

Source: "Big Six" College Experiences Linked to Life Preparedness by Sean Seymour and Shane Lopez, April 2015, Gallup.com.