Mammalogy

Fall **2022**

Dr. Christopher Yahnke

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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.

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, how to design an experiment and test hypotheses, and how to present results in a public forum.

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, optional daily notes uploaded to Canvas, 4 challenges, and 2 exams. The lab exams are worth 50 points each (50x2=100 points), and the research activity is worth 100 points. Lecture notes will be graded 20 times during the semester and each be worth 5 points (20x5=100 points). These are optional – you will get credit for doing them but not punished for not doing them. Notes outlines can be copied and pasted from Canvas and use your textbook to fill in pertinent information or you can turn them in after lectures. There will be two non-cumulative lecture exams each worth 100 points (100x2=200 points). Finally, there will be 4 challenges worth 10 points each (4x10=40 points). Thus, a total of between 440-540 points can be earned in this class. I use standard cut-offs for letter grades: A=92-100, A-=90-91, B+=88-89, B=83-87, B-=80-81, C+=78-79, C=73-77, C-=70-71, D+=68-69, D=63-67, D-=60-61, F=50-59. Because I use minimum grading, you can't earn less than 50% on a single assignment. Bad days should not result in no hope to recover a good grade in the course.

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 (25 points): You will contribute date on the squirrel behavior project as individuals and submit your data to a national dataset. On November 11th I will download the datasets and put them on Canvas. These are the dataset you will use for your team presentations. I will include a rubric on the assignment to guide you.

Team presentation (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 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 (25 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.

ATTITUDE

Nothing can stop the person with the right mental attitude from achieving their goal; nothing on earth can help the person with the wrong mental attitude. Thomas Jefferson

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

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	6	*Psychedelic haiku bat hand challenge*
	8	Phylogeny and diversification of mammals
	8-9	Lab 1: Bones and dental formula
	13	Monotremes and Marsupials
	15	Foods and feeding
	15-16	Lab 2: Monotremes and Marsupials
	20	Insectivores
	22	Locomotion
	22-23	Lab 3: Insectivores
	27	Echolocation
	29	*Schmeeckle bats challenge*
	29-30	No Labs this week
October	4	Environmental adaptations
	6	Communication, aggression, spatial relations
	6-7	Lab 4: Chiroptera
	11	Biological Rhythms
	13	Reproduction
	13-14	**Lab 5: Lab Exam 1**
	18	Sexual selection, parental care, and mating systems
	20	**LECTURE EXAM I**
	20-21	Lab 6: Marine mammals
	25	Carnivora
	27	*Conceptual blending and the marten challenge*
	27-28	Lab 7: Carnivora
November	1	Primates
	3	Dogs and more dogs
	3-4	Lab 8: Primates
	8	Rodentia and Lagomorpha
	10	Social behavior
	10-11	Lab 9**:** Rodentia and Lagomorpha I
	15	*Data cleaning/Jamovi challenge*

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

- James S. Findley

How do I succeed in this course?

The first key to success in this course is getting into the rhythm attending and participating in lectures, downloading and reading lab materials, attending and participating in labs. Being prepared and being present is a highly valued job readiness skill.

The second key to success is embracing the material and the assignments. If you grudgingly work at a class you are probably interested in, what will happen when your employer gives you a task that does not challenge you? Attitude matters and college is a relatively safe place to work on attitude.

Finally, you will probably have to study - [stupid college classes☺!] Organismal biology courses like this have lots of names to memorize. With each specimen in lab, think about potential questions I could ask. I give essay exams in lecture so look for 2 or 3 big ideas from each lecture that could be the basis of an essay question.

	17	Dispersal, habitat selection, and migration
	17-18	Lab 10: Lab 12: Rodentia and Lagomorpha II
	22	Populations and life history
	24	Thanksgiving Break
	29	Perissodactyla and Artiodactyla
December	1	Community ecology
	1-2	Lab 11: Perissodactyla and Artiodactyla
	6	Parasites and Diseases
	8	Presentations I
	8-9	**Lab 12: Final Lab Practicum**
	13	Presentations II
	15	Presentations III
	20	**Final Exam – 8:00 – 10:00 (Tuesday*)**

*** 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. Please reference the UWSP's website related to COVID. 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.

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

NACE
NATIONAL ASSOCIATION OF COLLEGES AND EMPLOYERS

SOURCE: NACE 2022 JOB OUTLOOK REPORT

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%

*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.