

Mammalogy

Fall

2020

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hours: Zoom by
appointment.

Class Times

Tuesdays and Thursdays
from 1:00 - 1:50 Online via
Zoom. Labs online with
podcasts and practice
quizzes in Canvas.

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.



“There have only been about a half dozen genuinely important events in the four-billion-year saga of life on Earth: single-celled life, multi-celled life, differentiation into plants and animals, movement of animals from water to land, and the advent of mammals and consciousness.”

- Elon Musk (CEO Space X, Tesla, odd duck)

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 3 laboratory online exams, a squirrel research activity, daily notes uploaded to Canvas, 5 challenges, and 2 exams. The lab online exams are worth 75 points each ($50 \times 3 = 150$ points), and the research activity is worth 50 points. Lecture notes will be graded 20 times during the semester and each be worth 5 points ($20 \times 5 = 100$ points). Note outlines can be copied and pasted from Canvas and use your textbook to fill in pertinent information. You will upload your notes to Canvas and can print a copy to bring to class. By completing notes before class everyone should know what we're talking about and be prepared to discuss the topic in class. Notes that are uploaded late will receive 0 points. There will be two non-cumulative lecture exams each worth 100 points ($100 \times 2 = 200$ points). Finally, there will be 5 challenges worth 10 points each ($5 \times 10 = 50$ points). Thus, a total of 600 points can be earned in this class. The final points will be added up, divided by 575, and multiplied by 100; the percentage obtained will determine your grade.

UWSP RELEASES COVID-19 CAMPUS GUIDELINES

Face Coverings:

- At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the [Disability and Assistive Technology Center](#) to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.

Other Guidance:

- Please monitor your own health each day using [this screening tool](#). If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and

contact Student Health Service (715-346-4646).

- As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.

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

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 Is^d 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, M^{rs} Stuart & Osborne landed to take a round of angles. — A fox (of Chiloe, a rare animal) sat on the point & was so absorbed in watching their mænœuvres, that he allowed me to walk behind him & actually kill him with my geological hammer.



Squirrels!!

This semester we will try and 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 just got an NSF grant to work more on these modules. Two of the modules work particularly well in our current Coronavirus landscape.

Data collection points (25 points): You will choose one (you can do both) on the squirrel behavior projects to do as individuals and submit your data to a national dataset. I will make a podcast with instructions for each of these studies and added a module to Canvas with the relevant information and links. On November 15th 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. You have the option of presenting your final project as a live Zoom to the class or as a presentation with audio. Both delivery methods will require teamwork skills that are currently valued in the marketplace but will become even more valuable in a post-coronavirus marketplace as businesses rethink how employees will interact.

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 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 project, meaning all members of the team will get the same grade. The 50 points will be assigned as follows:

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 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 seeds remaining is called the Giving Up Density (GUD).

Students can choose to follow the published protocol or try out a modified protocol if you are not on campus and can’t pick up equipment (trays, sand, seeds). You can see the published protocol and modified protocol by watching the YouTube video (link in Canvas).

Students can also decide to observe squirrel behavior and score behaviors as vigilant, foraging, social, etc. using an ethogram we developed.

“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 of assigned reading, upload class notes to Canvas, attend and participate in lectures, download and read lab materials, attend and participate in labs, and rise to the challenges. This rhythm alone will get you 150 “free” points. This might be short of the axiom that 95% of success is simply showing up, but it’s a start.

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.

Date	Topic	Chapter	
September	3	<i>Psychedelic haiku bat hand challenge</i>	
		Lab 1: Bones and dental formula	
	8	Monotremes and Marsupials	12
	10	Phylogeny and diversification of mammals	4
		Lab 2: Monotremes and Marsupials	
	15	Insectivores	13
	17	Foods and feeding	8
		Lab 3: Insectivores	
	22	Locomotion	7
	24	Echolocation	14
	Lab 4: Chiroptera		
	<i>Marshfield Zoo bats challenge</i>		
	29	Communication, aggression, spatial relations	22
October	1	Environmental adaptations	10
	1-2	LAB EXAM I (45 minutes: Due by midnight Friday)	
	6	Dillos, anteaters, sloths, pangolins, and aardvarks	16
	8	Reproduction	11
		Lab 5: Pilosa, Cingulata, Pholidota, Tubulidentata	
	13	Biological Rhythms	9
	15	Sexual selection, parental care, and mating systems	23
		Lab 6: Marine mammals	
	20	LECTURE EXAM I (120 minutes: Due by midnight)	
	22	Carnivora	17
27	<i>Conceptual blending and the marten challenge</i>		
29	Social behavior	24	
	Lab 7: Carnivora		
November	3	Dispersal, habitat selection, and migration	25
	5-6	LAB EXAM II (45 minutes: Due by midnight Friday)	
	10	Primates	15
	12	Populations and life history	26
		Lab 8: Primates	
	17	Rodentia and Lagomorpha	18
		<i>Chamber's Island mouse challenge</i>	
	19	Community ecology	27
		Lab 9: Rodentia and Lagomorpha I	
	24	Perissodactyla and Artiodactyla	20
26	Thanksgiving Break		
December	1	Parasites and Diseases	28
		<i>White-nose syndrome team challenge</i>	
	3	Zoogeography	6
		Lab 10: Perissodactyla and Artiodactyla	
	8	Live Zoom Presentations I	
	10	Live Zoom Presentations II	
10/11	LAB EXAM III (45 minutes: Due by midnight Friday)		
17	LECTURE EXAM II (120 minutes: Due by midnight)		

The top 10 skills employers say they seek in college graduates in order of importance.



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



Job Outlook 2019 – National Association of Colleges and Employers

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.